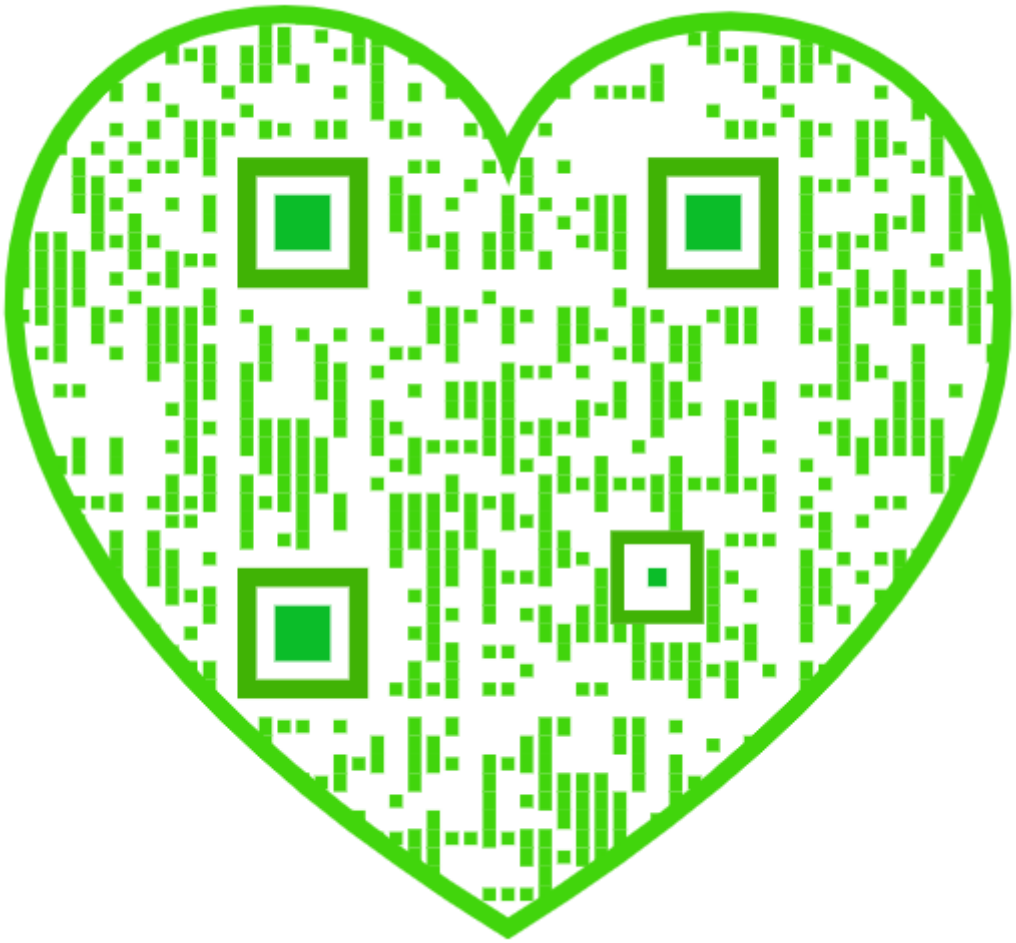
CANNING IN THE SOUTH



The Stevens Can Filling Machine

FOR TOMATOES.

WILL FILL

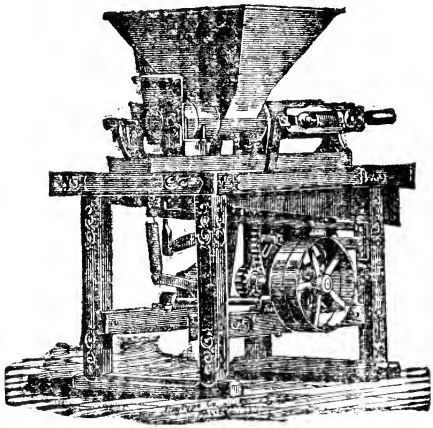
2 lb., 3 lb.

OR

Gal. Cans

Full Every Time.

NO WASTE.



CAPACITY:

Foot Machine

10,000 to 14,000 Cans.

Power Machine

20,000 to 30,000 Cans Per Day.

—MANUFACTURED ONLY BY—

MAURICE B. AYARS,

SALEM, N. J.

Presses, Dies and Can Making Tools.

Everything Needed in a First-class Can Shop

—MANUFACTURED BY —

AYARS' MACHINE WORKS,

ESTABLISHED 1849. SALEM, N. J.

CANNING IN THE SOUTH.

A HANDY

INFORMATION BOOK

—FOR—

SOUTHERN CANNERS.

BY THOMAS GAMBLE.

(COPYRIGHTED.)

1893.

MIRROR OF COMMERCE
AND
SOUTHERN CANNERS' JOURNAL.
SAVANNAH, GA.

PREFACE.

This compendium of information useful to Southern canners and those contemplating starting canning factories in this section, was prepared to meet a growing demand for a concise work of this character. The publisher has had the benefit of the experience of practical canners in a number of Southern States, to all of whom he returns thanks for the information so readily furnished.

THOMAS GAMBLE.

Savannah, Ga.

CONTENTS.

Chapter I—Canning as an Industry for the South.
Chapter II—The Best Method of Organization.
Chapter III—The Cannery on the Farm.
Chapter IV—Labor and its Remuneration.
Chapter V—What to Can and What to Pay for it.
Chapter VI—The Buildings and Plans for Plant.
Chapter VII—Plants and their Cost.
Chapter VIII—The Amount of Help Required.
Chapter IX—Number of Cans to a Bushel, etc.
Chapter X—The Canning of Fruits.
Chapter XI—Vegetables and their Canning.
Chapter XII—Time of Exhausting and Processing.
Chapter XIII—Standards of Canned Goods.
Chapter XIV—The Marketing of Canned Goods.
Chapter XV—Obstacles to Canning in the South.
Chapter XVI—Can Making in the South.
Chapter XVII—Forms of Contracts.
Chapter XVIII—Allied Industries.
Chapter XIX—General Information of Value.

CHAPTER I.

Canning as an Industry for the South.

In considering the establishment of any industry there are certain things that must be kept constantly in view if success is desired. The principal of these are:

First. The amount of money required for the purchase and location of the plant.

Second. The presence of a sufficient supply of raw material at moderate prices.

Third. The existing demand for the particular kind of goods produced.

Fourth. The facility with which they can be marketed.

Fifth. The probability of obtaining prices that will give at least a fair return on the capital invested.

Sixth. The securing of necessary labor and accustoming of it to new conditions of occupation.

Seventh. The outlook for an expansion of the demand to keep pace with the increase in the supply caused by the starting of new factories and the enlargement of those already in operation.

Any man, or combination of men, having any experience in business matters will give all of these details careful and thorough consideration before investing any money in a new enterprise. In addition to these, if they are far sighted, they will give proper heed to the opportunity that will be afforded them, in case of a financial pressure, of realizing immediately to some extent upon their products.

These conditions apply with equal force to any and all sections of the country They are part of the economic theory of successful industrial life. Unless they can be satisfactorily met the success of an enterprise is rendered to some extent dubious. When the scope of the problem is broadened and the industry under consideration is intended to cover a vast extent of territory in its ramifications, these matters become of even greater importance in their bearing on the final result. By the test of such interrogations, then, as well as by the question of adaptability to climatic and other conditions, the industry that is best for the South must be tried. To the extent that any one of the many that may be suggested meets these requirements, it will meet the industrial needs of the South and give a reasonable assurance to its people that in investing their money they are doing so with a prospect of securing at least an average rate of interest and of building up their immediate localities, and the South as a whole, in one of the greatest sources of wealth and power—manufactures.

The canning of vegetables, fruits, oysters, fish, meats, etc.—or what is termed the canning or packing industry—meets these and all other requirements more fully and more satisfactorily than any other industry open to the South, and has the additional advantage of having already been amply tried in every portion of the South, with various of its products and under the most diverse conditions, and in practically every instance with abundant success crowning the efforts of those financially interested. Looking at it in any light, or in all lights, the same favorable conclusion must be reached.

To begin with, the canning industry requires but a small outlay of money to completely pay for the plant. The amount of money needed to purchase a single machine in many other manufacturing industries will, in this one, buy the plant throughout and place it in position ready for operation. A plant that will permit of a daily output worth, at factory rates, from $120 to $200 can be bought for from $300 to $500. Another, the value of whose output would be from $250 to $400 per day, can be had for $800 to $1,000. Almost any building is suitable for the industry, and if none is at hand one can be erected at an additional cost of but a few hundred dollars. This makes it possible for a few men in a community to establish a canning factory without any one of them risking a very large sum of money. One hundred shares of stock at $25 per share can be disposed of in any small town for such a purpose, and an industry started which will pay out in wages in two seasons more than the entire capital invested, and be of benefit to every individual in the place. In addition, much money will be kept at home that would otherwise go North and West for the same class of goods.

The raw supplies for the canners are either already found on all sides, or are easily procured by enlisting the interest of farmers quick to see the advantages of such a market for crops that they hitherto may not have raised through lack of an opportunity to dispose of them. At several points in South Carolina, Georgia, Tennessee and other States, farmers are devoting a considerable acreage to the raising of tomatoes for canning factories newly established in their vicinity. They have met with so much success that in coming seasons many more will give up ground to this and other vegetables. They will, in this way, not only secure ready cash at a season of the year when they need it badly, but they will, at the same time, by cutting down the acreage of cotton, benefit themselves greatly as regards that product. This diversification of crops will also enable many farmers to live much better than before, and will serve to relieve the South of the stigma that her farmers have nothing to eat but "hog and hominy." Fresh

vegetables daily will be a desirable addition to many country tables, and will be especially welcome when it is remembered that the cost, under such circumstances as these, is absolutely nothing.

Along the South Atlantic and Gulf coasts, oysters, clams, terrapin and shrimp are already canned in large quantities every season. The canning of fish is but the next step. Some of these canneries are so fortunately situated that they eventually will secure vegetables and fruits to work on during the summer, and in this way be enabled to continue operations over a much longer period than Northern or Western factories, having practically no "close down." Farther back from the coast vegetables and fruits are obtained during a much greater part of the year than outside of the South. This is a strong point in favor of the canning industry in the South. In Virginia, North Carolina, South Carolina, Georgia, Tennessee, Alabama, Mississippi, Arkansas and Kentucky factories are now turning out every season hundreds of thousands of cans of tomatoes, corn, beans peas, succotash, etc., together with apples, peaches, pears, plums and other fruits. Some locations naturally h ve an advantage over others with regard to certain products of the soil suitable for canning. In central Georgia, for instance, the canning of peaches is destined to become an immense industry. In Florida tropical fruits will be more generally canned. Guavas are on the market from that State that excel those canned in the Bahamas. Pine apples, at the rate the cultivation of that delicious fruit is progressing, will forge to the front within a few seasons. Oranges are also being canned with success, and it is now believed that other tropical and semi-tropical fruits will be added to the list. In Eastern Georgia and South Carolina considerable okra is being canned to meet the steady demand for that article in the South. There is no reason why this vegetable should not be as well known North and West as here. Beef canning is also in prospect in Florida, while down in Texas large plants are either in operation or being constructed for the canning of meats. The immense possibilities of that great State in this direction surpass the imagination. It is possible for Texas to supply the world's demand for canned meats for centuries to come.

Of all the things enumerated, and of many others as well that are used by canners, there is in some sections of the South an abundance. There is no place where a sufficient supply of one or more of them is not obtainable either at present or within a season or two. Of the raw supply for no other industry is this true. Iron and coal are found only in certain limited localities. Lumber suitable for furniture, etc., is scattered, and so on through the list of availables. Of all the industries that of canning is the only one

the raw material for which can be secured in every State, and almost every portion of every State in the South. That this is true is perhaps better demonstated by a statement of the factories now in this section (1893). As far as can be ascertained there are now nearly 500 in all, divided as follows:

Alabama	17
Arkansas	18
Florida	25
Georgia	25
Kentucky	10
Louisiana	13
Mississippi	25
North Carolina	50
South Carolina	36
Tennessee	30
Texas	60
Virginia	175
West Virginia	10

As an adjunct to canning a number of these factories also pickle and preserve.

At the rate of their increase in number within the past three or four years, there will be fully 1,000 canning factories in the South within the next four years, while the total output for this section will be increased by 400 per cent., as many are now preparing to greatly enlarge their plants.

Of the demand for canned goods it is hardly necessary to speak. Every one intelligent enough to be interested in the subject under discussion realizes its immensity from personal observation. Figures show that it is growing at a much more rapid rate than population in this country, while the increase of the demand in European countries is astonishing. New markets are being found in all the old countries of the world, as well as in those to our south on the new continent. There is seemingly no limit to the probable expansion of the demand, while at present the opening of the season generally finds the markets of the United States almost depleted. It is safe to say that for no other articles is there the same steady popular demand, or the same prospects of the future demand keeping up with or ahead of all possible supply. Manufacturers who have suffered so severely from overproduction will realize what this means. The rapid increase in the number of factories North and West, as well as South, and their general prosperity are sufficient answer to the question as to whether profitable prices have been the rule for their products.

❋ EVERY SOUTHERN CANNER ❋

—AND—

EVERY PROSPECTIVE CANNER

Should Subscribe for

THE MIRROR OF COMMERCE

—AND—

Southern Canners' Journal

Of Savannah, Ga.

A Monthly Publication devoted to the interests of the Canning Industry in the South.

SUBSCRIPTION, $1.00 PER ANNUM.

SAMPLE COPY SENT FREE on APPLICATION.

Address ***THOMAS GAMBLE,*** *Manager,*

SAVANNAH, GA.

When the question of labor is considered it is even more plainly apparent that this is the ideal industry for the South. Out of one hundred employees in a canning factory there will not be a half dozen whose services are indispensable, that is, whose places could not be filled by taking in persons ignorant entirely of the business and giving them a few days' training. Despite this fact fairly good wages are paid for this class of labor, and there is no cause for complaint on the ground of unjust compensation. The factories already in operation in the South have given employment to hundreds of people who would otherwise have been unable to earn any money at all. Home labor, and not imported labor, has, with extremely few exceptions, been employed. To what extent is this true of other industries?

As to markets, they are everywhere, beginning at the door of the factory and extending nearly 25,000 miles, around the globe and back to it again. Wherever there are people to be fed, civilized, semi-civilized or barbarous, there is a market for canned goods. The canner in the South can begin by supplying his own near-by towns and then send his surplus, if he has any, to the greater markets beyond. If he needs money at any time, it is doubtful if there is any line of goods on which it could be more speedily realized, or at less loss than canned products.

All these things unite to make this an industry peculiarly suitable for a section where money is comparatively scarce, where labor is crude, where diversity of crops is needed, where the soil is capable of producing everything that can be raised elsewhere, and where there is already a consuming population of 20,000,000 people, all eager to patronize home industries. Northern canners realize that the South is the canning centre of the future. Already its canned goods have cut a wide swath into the demand for their products. They feel the effects of Southern competition in this industry and acknowledge it. They know, even if the people of the South do not realize it, that the South is especially adapted to this industry. They are watching its progress here with both interest and anxiety, and there is the best of reason to believe that the investments some of them have made here are to be soon followed, in quick succession, by others. It behooves the people of the South to take this most promising industry in hand and secure and maintain control of it.

It is the best industry for the South.

CHAPTER II.

The Best Method of Organization.

Under the existing circumstances, it is generally better to organize companies in the South for the establishment of canning factories than for individuals to attempt to conduct such enterprises depending on their own financial resources. Too many of the latter class of canning factories have failed, even when advantageously situated, owing to the too limited capital of the proprietors. In a number of instances parties have exhausted their entire capital in the purchase of a plant. Being forced to seek credit at ruinous rates, to obtain the money with which to meet the running expenses, they have found the way a rocky one and, too frequently for the good of the industry in this section, have been forced to the wall. A similar financial fate would have been theirs in any other industry. Canning factories are no exceptions to the well established rules of business. Deviation from correct principles invites disaster. No enterprise can expect to succeed which is working on borrowed capital with the rate of interest at 8, 10, or even 12, per cent.

The cost of a plant and building is nothing but a basis on which to calculate the amount of capital required. While a suitable structure may be built and machinery with capacity desired may be bought and placed in position for $1,000, there are several items of continuous expenditure that must be carefully considered. Even for a small pack the cost of cans will run well up into the hundreds of dollars. The difference between cash and time payments is considerable. Labor must be paid regularly if satifactory service is desired. The average number of persons to be employed must be ascertained and the weekly pay roll determined for the entire season, the duration of which will depend upon the products canned and, to some extent, the situation of the factory. On the coast, for instance, the season for oysters, etc., is placed at five months. So far no Southern factory of this class has been able to secure vegetables or fruits in such quantities, or at such prices, as to justify canning them except as experiments. In the interior, some factories are enabled to obtain a sufficient supply of vegetables and fruits to run them for four or five months, the number of employes of course being largest at the height of the season, or during a period of about six or eight weeks. It is well for the beginner to be liberal in such estimates. The processor's salary, being usually a matter of special contract for the season, is a known quantity. With his assistance, and a knowledge of the supply of raw stock that can be depended upon, it will be a

comparatively easy matter to figure out this important item of expense. Elsewhere, comparative statements will be found of the wages paid the several classes of labor in the Southern States, together with the number of hands required in the operation of plants with capacities ranging from 1,000 to 10,000 cans per day.

The cost of the vegetables and fruits consumed is another item that will reach large proportions during a packing season. The great inducement held out to farmers in the South to raise supplies for canning factories is that these are *cash* crops and that the money, coming in at a time of the year when they are usually sorely pressed, will greatly relieve them. If a regular supply of material to pack is desired cash payments must be made, otherwise growers are apt to reach the conclusion that it does not pay them to give up their land to this purpose. In this connection it may be remarked that, in the present state of agriculture in the South, it is essential that arrangements be made for an adequate supply before a canning factory is established. A number have been forced to close down, at least temporarily, through failure to obtain the needed stock to work up. Contracts should be made to this end and their terms rigidly observed. A carefully compiled table will be found on another page showing the average prices paid in the South for vegetables and fruits, the average number of bushels to the acre, and the number of cans to the bushel. Tomatoes, for example, will be found to average, in fair soil, 300 bushels. A bushel of good tomatoes will fill from 18 to 20 2-lb. cans, or 12 to 15 3-lb. cans. The yield from one acre is sufficient for about 5,700 2 lb. cans, or about 4,000 3-lb. cans. An acre, then, can be depended upon to furnish a supply for practically three days' operation of a factory whose plant has a capacity of 2,000 2-lb. cans daily. Twenty cents per bushel of 60 lbs. being the average price paid for tomatoes by the Southern canners, the purchase of the crop from an acre necessitates an expenditure of about $60. With these figures before him the canner, knowing the quantity he desires to pack of any vegetable, can easily ascertain the number of acres or bushels he should contract for and what his expenditure for supplies of each vegetable or fruit purchased in this way will be. Ample capital should be on hand to carry the enterprise through the first year, at least, without recourse to the money lenders.

A stock company is generally able to raise a larger amount than the individual or firm. It also has the advantage, through its membership, of awakening a greater public interest in its success. Stock should be made of a par value that will be within the reach of all. A good price per share is $25. Two hundred shares at this figure would give $5,000—a sum with which a fair size factory

could be started with excellent prospects of success. Where a subscription contract of a proposed corporation fixes the capital stock at a certain sum divided into shares, the whole amount of capital so fixed must be fully secured by a bona fide subscription before an action will lie upon the personal contract of the subscribers to the stock to recover an assessment on the several shares, unless there is a provision in the subscription contract to proceed in the execution of the main design before the whole amount of capital is subscribed. Endeavor to make the capital as large as possible to provide a margin for all contingencies, and do not be carried away by too strong a desire to start out with a large pack the first season.

In organizing a company it is advisable, if in any way possible, to enlist the co-operation of a few farmers. By putting the shares down to small values this can be done. As soon as a farmer has money invested in such an enterprise, no matter how small the amount may seem to others, his interest in its success is aroused, and it will be an easy matter to get his valuable assistance in the raising of those vegetables and fruits that the factory will need. The farmer, as the producer of the necessary raw supplies, is a factor whose importace to the industry cannot be over-looked. Neither should he be disregarded as one whose financial assistance should be invoked. Several companies have likewise included in their membership, for business reasons, one or more grocers who have handled largely of their output and induced others in that business to act as middlemen between the company and the consumers. It is not best to agree to allow one house, unless it be a large wholesale concern with a trade sufficient to exhaust it, to control the entire output of a factory.

As managers are expensive, care should be taken in the selection of officers and directors to secure capable business men who can give some of their time to the actual management of the factory. In the small towns, where canneries are generally being located in the South, the business men, as a rule, can do this without inflicting personal loss upon themselves. Having a financial interest in the enterprise they are more apt to see to it that it is conducted economically and carefully than a manager merely engaged for a few months would be. A small factory, working on a small capital, cannot afford a manager unless he is likewise processor and willing to assist in any other of the work of canning. Skilled processors are becoming more numerous in the South every year, and reliable men can now be obtained at reasonable salaries, who, under the supervision of proper directors, can conduct a factory satisfactorily. A great advantage is derived at the outset through having the benefit of the experience of such an employe in the

selection of the plant. While the manufacturers will do the best in their power to give complete satisfaction, they cannot be expected to be as competent to advise as to what should be bought as the man who has been on the ground, studied the situation, knows exactly what the factory should be in a position to do, and what it will require in the way of machinery. Some Southern canners, going ahead blindly, have bought machinery absolutely useless to them, and omitted getting other that was soon required, thus entailing unnecessarily heavy expenditure at the outset.

CHAPTER III.

The Cannery on the Farm.

The former chapter is intended to bear principally upon the establishment of canning factories in town, and by town people who do not expect to do more than invest their money and give the benefit of their direction and support. The situation is different in some respects when the smaller home cannery, put up on the farm and operated by the farmer and his help, is considered. To begin with, there is frequently no necessity of the construction of a special building. This is a considerable saving at the start. If a building is needed it can be of a cheaper character than is required in a city. Then, unless the farmer is going into canning on an extensive scale, his plant need cost him but a comparatively small amount. He can dispense with the expensive steam apparatus, involving considerable expense in operation, and adopt the most simple method known. By this course he does not tie up much of his capital in the plant, and in the event of any mishap is not a heavy loser by the experiment.

The farmer enjoys many advantages as a canner not possessed by those whose factories are located in town. At the same time he is placed at some disadvantage by extra cost of transportation, and by the inconvenience he labors under at first in seeking avenues for the disposal of his goods. The latter is overcome by time and effort; the former, except in rare instances, is far from being an insuperable obstacle to success, as is demonstrated in Maryland where scores of farmers profitably operate canning factories at home.

The Southern farmer is peculiarly well situated to take up the canning industry. He can raise almost every vegetable and fruit

321, 323, 325, 327 N. HOLLIDAY ST., BALTIMORE, MD.

LABELS!

Monumental Label Co.,

BALTIMORE, MD.

CANNED GOODS LABELS A SPECIALTY.

Designs and Estimates Cheerfully Furnished.

ESTABLISHED 1857.

A. K. ROBINS & CO.,

724 East Pratt St., - BALTIMORE, MD.,

—MANUFACTURERS OF—

Canning Machinery, Solder and Cans.

Having large facilities we are prepared to furnish upon short notice.

CORRESPONDENCE SOLICITED.

that is used for canning purposes. To provide supplies for his factory he need not give up a large portion of his plantation to such crops. As has been stated, sufficient tomatoes can be secured from an acre for 4,000 3-pound cans. Ten acres will yield sufficient for 40,000 cans—the market value of which will be from $3,500 to $4,000. And so with other vegetables and fruits.

By setting aside a small portion of his land to this purpose he can continue the raising of cotton, and such other crops as he had been previously devoting his entire attention to, on but a slightly decreased scale. He need not endeavor to raise canning supplies to such an extent as to seriously hamper his other farm operations. His vegetables and fruits can be made his incidental surplus crops. If near a market the early pickings can generally be disposed of there at fine prices, the canning being postponed until it is no longer remunerative to ship to town. By this method two cash returns are received from these crops and material financial assistance is rendered the farmer in the event of his cotton or other crops being a failure or commanding such low prices as to wipe out all profit so far as he is concerned. At the same time, in many instances, he will be enabled to live better so far as table fare is concerned.

The capital required by a farmer is greatly decreased through his raising his supplies and by the further important fact that his labor can be utilized in the canning factory at much less expense to him than falls to the lot of other canners for the services of employes doing the same class of work. In a section where negro labor is so abundant that able-bodied men can be secured as farm help at $8 to $10 a month with light rations, the farmer has a decided advantage when he enters an industry in which such a great proportion of the labor requires but a day or two's training to render it fairly proficient. Some quite extensive canneries in the South employ active girls as peelers, etc., at 15 to 30 cents a day, and have no trouble in getting men and women at 35 to 75 cents for the performance of more arduous work.

Farmers putting up small packs should seek to make their output of superior quality, so that it will be readily recognized as first-class and secure prices in accordance. This they can easily do, having the fruits and vegetables freshly picked, if they will but give to the industry the careful attention necessary to complete success. In placing their goods on the market they should refrain from injudicious cutting of prices. Their goods are entitled to the same prices as others of a similar quality, no matter where packed.

A plant of the character indicated, of ample capacity, can be bought, a furnace built and every thing put in readiness for opera-

tion at a cost of between $300 and $400. Cans vary in price. It is well not to estimate lower than $25 per 1,000. The discount for cash, about 10 per cent., is an item that cannot be lost sight of. Then there are expenditures for labels, solder, cases, etc., to be considered. Prospective canners must not allow themselves to be misled into the idea so many seem to have entertained, that the money for the plant in hand little else is required. The output cannot be sold by the dozen as rapidly as the cans are filled. Money is required for the labor and supplies outside of fruits and vegetables. It may be necessary to hold the canned goods several months, frequently it is decidedly profitable to do so before marketing. For these and other reasons that will at once suggest themselves to sensible men who desire to enter the business to make money and not to lose it, it must be urged that farmers do not go into canning unless they either have sufficient money or are in a position where they can secure whatever amount may be necessary to carry them along until the returns of the season's pack arrive. There is a fair profit in canned goods, the industry, as has been stated, is peculiarly suited to the South and the Southern farmer is wise to take advantage of the opportunity it affords him. Failures, though, no matter how caused, will tend to give the industry a black eye in this section and greatly retard its natural development. Ninety per cent. of those that have so far occurred have been due to the lack of capital—the starting of factories under the impression that once the plant was in readiness for operation it would run itself without further expenditures. The South is going to be the great canning section of the United States and that speedily, but it will not become such by the rushing into the industry of men who have not intelligently considered the cost and prepared accordingiy. A large capital, it is true, is not necessary, but $250 or $300 is totally inadequate, no matter what may be written otherwise. Men with such an amount will benefit themselves and the industry in the South by placing the money in a limited home stock company where the accumulated capitals of a few would put all in a position to derive large dividends from their investments. Four or five farmers, for instance, could unite their money in this manner, select a central site for the factory, put up a cheap frame structure, buy a small plant, devote a couple of acres each to the raising of supplies, join their efforts in canning time and find the industry one that would yield them handsome cash returns. The larger the output the less the proportionate cost per can to the packer. There is ample room in the South for many of such factories as this and a career of prosperity open to all.

The farmer who has sufficient capital to buy his plant and supplies and who has the determination to overcome difficulties should seek in advance to make arrangements with the merchants of the towns of his vicinity to handle his output. By making contracts with them for future delivery, he will be in a better position to command financial assistance and to judge as to what sales he can absolutely rely on. The home market is the one to be cultivated by all Southern canners and especially by those who are working on a small scale and a limited capital.

CHAPTER IV.

Labor and Its Remuneration.

In correspondence with practical Southern canners of considerable experience and success, stress has been laid by them upon the fact that many canneries in this section are paying their processors wages entirely too high and unjustified by their services and the profits of the business. These large salaries are too heavy a drain upon small industries. There is no reason why a processor should receive a sum altogether out of proportion to the wages paid other help. Many have seen the error of contracting with men to do this work at from $75 to $100 a month, and have secured equally capable and reliable employes at from $40 to $60. A saving of from $200 to $250 a season in the pay of one assistant is an item of much importance. The same principle of proper economy must be applied to all classes of labor. With competition so keen, freight rates against them, and the task upon them of building up a new industry, Southern canners cannot afford to give more than is being paid for labor elsewhere, and, if anything, considering the large amount of idle labor in this section, should secure the off-setting benefit of a much smaller pay roll.

Another thing to be guarded against is the employment of too many hands for the quantity of work to be done. Southern canners, not having had the benefit of a training in the business, have frequently expended far more money than was necessary for help the first season or two. Indeed, to these causes a number have largely attributed their failure to do more than meet expenses until observation taught them what an average individual can be relied upon to do. In some factories all labor is paid by the day, and it is in such that especial care must be taken in this respect. There is a difference of opinion among Southern canners as to

whether it is best to offer a stipulated sum daily or to pay in accordance with the amount of work done. The preponderance of experience favors the latter as the best course to pursue in every class of work that permits of it.

In the preparation of the following statements as to the proper remuneration for labor in Southern canneries, the knowledge of canners in all parts of the South has been freely drawn upon. They will be found of permanent value to those already in the business, as well as to the many others who contemplate starting factories. From them it will be easy to judge as to what should be paid for any class of work not specified:

By Day.

CLASS OF LABOR.	PAY.
Processor and Tipper	$ 1 50@$2 50
Tipper	1 00
Capper	1 00@ 1 50
Packer	1 00
Fireman	1 00
Labeler	25@ 50
Peeler	25@ 50
Scalder	25@ 50
Wiper	35@ 50
Common Labor	50@ 75

By Piece.

CLASS OF WORK.	AMOUNT.	PAY.
Tipping	per 1,000	$ 75
Capping	per 1,000	75
Packing (hand)	per 1,000	75
Labeling	per 1,000	25
Peeling Peaches, standard,	per bucket (2½ galls.)	04
Peeling Peaches, pie	per bucket (2½ galls.)	02½
Peeling Tomatoes	per bucket (2½ galls.)	03
Peeling Apples	per bucket (2½ galls.)	02½
Stringing Beans	per bucket (2½ galls.)	03
Husking Corn	per 12 ears	01
Shucking Oysters	per 72 ounces	08
Shelling Peas	per bushel	15

Some Southern canners have adopted the plan—and with excellent results—of paying all employes, except those labeling or peeling, shelling, husking, etc., by the hour. This has been done owing to the irregularity of the work. The standards of pay are 10 cents per hour for men and 5 cents for women.

Wages will vary somewhat in different sections, but the tables are an excellent standard to go by. The piece wages given are practically those furnished by canners widely scattered over a half

dozen States. A few paid 2½ cents instead of 3 cents per bucket for peeling tomatoes, and but 3½ cents for standard peaches. Several canners wrote that they paid their capper and tipper $25 per month each; while one had good service from employes in this capacity at but $20. Considerable depends on the state of the local labor market, but the wages specified are fully up to the average, if not slightly above, and it is not advisable to pay more. And, by all means, do not contract for a processor at $75 to $100 a month. Other Southern canners are paying from $40 to $60, and it will take the profits of many cans to make up the difference between such wages and those that are so confidently asked for by some processors applying for positions.

A vexatious question in this connection is that of the relative merits of white and negro labor. In many places in the South it is extremely difficult to secure sufficient white labor to operate a canning factory. White labor, too, as a rule, expects better pay for the same services than negro. In order to accurately determine the value of negro labor in this industry, and the extent to which it is employed, canners in a number of Southern States were requested to answer these questions:

Do you make use of colored labor in your factory?

If so, how does it compare with white labor in cost and efficiency?

If not, what are the objections to its use?

Many responded. With but two or three exceptions they all employed negro labor to a greater or less extent. The majority had found it satisfactory. Several others, peculiarly situated, candidly acknowledged that they preferred it and if in a position to secure it would use it largely. Some stated that they had about half negro and half white labor, with no preference. The few exceptions referred to opposed negro labor entirely on the grounds of uncleanliness, unreliability and slowness. With the experience of many showing that negro labor can be utilized with satisfactory results, it is apparent that these objections have no general application. If negroes are employed they naturally should be selected with care. Cleanliness and steady work it has been found can be enforced without great trouble. The average negro can be quickly trained to peel, scald, pack, wipe, label, etc., while white labor, or a more intelligent and higher price grade of negro labor, can be used for capping and tipping. If both classes of labor are used the same price must be paid for the same work, otherwise dissatisfaction and dissension will inevitably ensue. To prospective canners, who are naturally greatly interested in this matter, it can be emphatically stated that practically all of the work, under proper direction, can be done by negroes, of whom there is generally an abundance eager to secure work in every Southern community.

E. W. BLATCHFORD & CO.,

CHICAGO, - - ILLINOIS.

Manufacturers of **SOLDER.**

We make all standard forms and grades, and guarantee proportions of Tin and Lead as represented. We beg to call your attention to the special forms adapted for Capping 2-pound and 3-pound cans as follows:

WIRE SEGMENTS.

These are curved to shape of the can crease of standard sized opening cans, and fit snugly in the crease until contact with the soldering coppers or steels. These segments give universal satisfaction in Hand Capping, or when used with the "Cox," "Ferguson," "Warfield," and similar Capping Machines.

WIRE SOLDER

on Spools, is especially adapted for use on "The Canadian," "Climax," "Norton" and "Triumph" Capping Machines, and properly used is the most economical mode of soldering on either of these Cappers.

SEND FOR SAMPLES AND PRICES.

E. W. BLATCHFORD & CO.,

70 N. Clinton St., CHICAGO, ILL.

CHAPTER V.

What to Can and What to Pay For It.

What shall be canned? What shall be paid for supplies? There are no questions confronting the Southern canner that are of more importance and in the answering of which greater care should be taken. The overstocking of markets is fraught with disastrous results. As regards the few articles in tin for which there is an enormous demand, circumscribed only by world-wide limits, there is little fear of this occurring. When others are considered, for some of which there may be but a comparatively local call, it is found that there is constant danger of the supply vastly exceeding the requirements of consumption. Okra, for instance, of which the dried article can be bought when the green vegetable is not in the market, finds but little demand outside of the South. Of such an article it is easy, with each Southern canner ignorant as to what nearly all the others are packing, to have the markets so overrun that no one can obtain a price yielding a profit, and many be forced to carry a large part of their stock over to another season. The same statement is true of okra and tomatoes, of guavas, of squash and other articles.

The great staple canned goods are tomatoes, corn, peaches, peas. Following them are beans, sweet potatoes, pumpkins, squashes (in vegetables), and apples, pineapples, pears, plums and the berries. In the absence of an Association of Southern Canners large enough to enable its members to obtain a reliable statement as to what the probable pack of each article will be, it is well for them, unless exceptionally situated, not to go heavily into any other than the first four mentioned. For them there is practically always a demand sufficient to exhaust the pack. As the output of them increases the consumption keeps pace with it. Of the other articles—pineapples excepted—this is not always the case, and more caution must be observed in packing them. Of course, if a canner is in a section where he can get an abundance of beans at low prices while peas are scarce and high, common sense will dictate the packing of the beans in preference to the peas. So as to apples. Certain sections are favored with this fruit of a fine quality and in such great quantities that it can be obtained for little more than nothing. Apples, under such circumstances, might naturally be the mainstay of a factory. But many factories—perhaps the majority—will be so situated that, if they desire to contract for them, sweet potatoes, or beans or squashes can be obtained in equal abundance, and at as low prices comparatively as tomatoes, corn or peas. It is in these cases where

a wise discrimination must be observed. To such there is but one thing to say: Subordinate the pack of other vegetables to those (first) of tomatoes, (second) of corn, (third) of peas. This is the unanimous verdict of Southern canners. An old maxim, to the effect that it is not wise to carry all one's eggs in one basket, is likewise not without its application in the canning business.

Certain sections are destined to become the canning centres for certain fruits or vegetables. Just as New Jersey and Maryland are famous for their canned tomatoes, so will Central and Southwest Georgia, and parts of other Southern States where the fruit flourishes, become noted for their canned peaches; and Florida, rapidly developing into a great pineapple producing State, become the headquarters for that division of the canning industry. Peaches and pineapples are two of the best paying products of the cannery. The margin on each is good, and is especially large on the fancy stock. The attention of Southern canners, and prospective canners, cannot be too frequently called to the fact that the best profits are always to be obtained from the high grade goods. Don't, under any circumstances or with any fruit or vegetable, sacrifice quality for the sake of quantity. It is an error, intentional or otherwise, that will soon bring almost irretrievable ruin on the offending canner. This is rapidly ceasing to be a cheap nation, so far as food is concerned. The discriminating public becomes larger every year. It may be possible to dispose of poor goods the first season at remunerative prices, but the result will be seen the succeeding year in general suspicion that will cost the canner far more than his previous dishonest gains.

The berries are not regarded as safe from the canners' standpoint. Although blackberries, growing abundantly and requiring no expenditure save that for picking, cost but a small amount, it is well to pack very sparingly of them. Strawberries pay better, but the same caution holds good. Whortleberries or huckelberries may be included in the same category. Pears and plums may be packed more freely, and offer a fair margin of profit. Along the coast, where asparagus culture is spreading, the canning of that delicious vegetable will pay after the Northern markets fail to offer remunerative prices for raw stock. Lima and string beans, okra, and okra and tomatoes, squashes, and sweet potatoes, all offer a reasonable profit, but each one carries with it an injunction to avoid packing in excessive quantities under ordinary conditions. Make them part of the output, but, except in rare cases, do not make any one of them the most prominent factor in the season's work.

The following table showing the prices paid for supplies, has been prepared from the statements received from numerous practical Southern canners. Its value is apparent :

Average Cost for Supplies.

[Figures based on statements received from Southern canners. Prices vary somewhat in different sections of the South and according to fullness of crops. The finest quality of fruits commands prices above these figures. As to very poor fruits or vegetables, it is decidedly better not to pack them.]

Apples	$ 40	per bushel.
Asparagus	7 50	per 100 bundles.
Beans, Lima	80	per bushel.
Beans, String	20	per bushel.
Blackberries	50@75	per bushel.
Corn	7 50	per ton.
Guavas	60	per bushel.
Huckleberries	75@1 00	per bushel.
Okra	40	per bushel.
Peaches, standard	50@75	per bushel.
Peaches, pie	25@40	per bushel.
Pears	50@75	per bushel.
Peas	30	per bushel.
Pineapples	4 50@5 50	per hundred.
Plums	1 00	per bushel.
Pumpkins	3 50	per ton.
Quinces	75	per bushel.
Squashes	8 00	per ton.
Strawberries	1 25	per bushel.
Sweet Potatoes	1 25	per barrel.
Tomatoes	20	per bushel.

[Further information is given in the chapters on the canning of fruits and vegetables.]

CHAPTER VI.

The Buildings and Plans for Plant.

In the planning of a building for canning purposes four things should be aimed at—ample space, good ventilation, abundance of light and a constant adequate supply of pure water. Each is of sufficient importance to entitle it to consideration as a specific object to be kept steadily in view. No matter how cheap the building or how rudely constructed, it should be large enough to permit of the work being done without employes being hindered by lack of room. The machinery, tables, etc., should not be cramped together. The aisles should be broad, so that those moving the goods about in the several stages need not interfere with others. As in the majority of factories the canning is done in the summer months, there should be sufficient windows to secure proper ventilation. If a factory is but half ventilated or half lighted the same amount of work cannot be obtained from employes as if attention had been paid to these important details of the building. Even though it may cost somewhat more, it is a wise expenditure that will bring far more satisfactory results than if a false economy had been observed.

As there is nothing about a cannery that is more essential than *pure water*, the providing of it must be among the first things considered. Many Southern factories have wisely had artesian wells drilled. In most localities this is not such a heavy expense as to render it inadvisable. Wherever practicable such a source of suppiy should be provided. In the case of large factories it is generally absolutely necessary. In country canneries the ordinary well water may be used, provided it is free from contaminating influences. By all means see to it that pure water is at hand before beginning operations.

Just as canners vary in their processes so do they all have their personal preferences as to the arrangement of their plants. The thing aimed at by all is to prevent any unnecessary moving of the goods from the time they reach the factory until they are ready to be cased for the market. The plant is put up with this object in view, and in all factories where experienced men have been in charge the general plan is similar. No matter what the capacity of the plant may be its arrangement should be about the same. Of the accompanying diagrams, No. 2 was prepared at a recently built Southern factory with a capacity of 5,000 cans a day. The manager had been in charge of several factories and knew exactly what was needed. In order to lessen the chance of fire, he buried the gasoline tank about twenty-five feet from the building,

Burt Manufacturing Company,

—MANUFACTURERS OF—

CANNING SPECIALTIES.

WIPING MACHINES,

TOPPING MACHINES;

The Great Labor Savers,

CAPPING MACHINES.

COAL OIL BURNERS,

Producing the Hottest Flame

For Heating Capping Steels

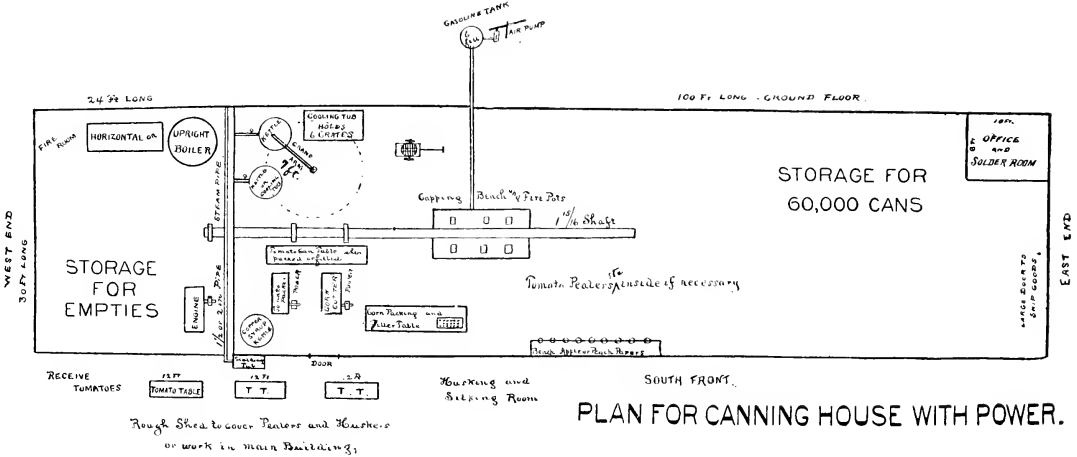
and Soldering Irons.

Noted for Simplicity and Economy.

PRESSES, DIES AND SPECIAL MACHINERY.

BURT MANUFACTURING CO.,

ROCHESTER, N. Y.



Rough Shed to cover Peelers and Huskers or work in main Building.

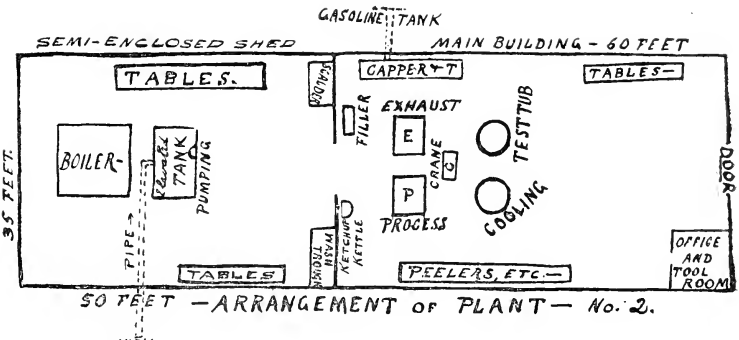
PLAN FOR CANNING HOUSE WITH POWER.

leaving the top level with the earth so that it might readily be filled. Pipes connected it with the fire pots and the small air pump, through the use of which pressure was obtained to force the gas to the factory. None of the tables was made a permanent fixture. They can all be moved in the event of a change being desired. The general arrangement he regards as eminently satisfactory in its practical results.

The cost of a building of the size of this (No. 2), with shed attached, will vary according to location. In this building, which is one story in height with roof slanting from walls fifteen feet high to a central peak twenty-five feet high, and eaves projecting about two feet over the edge, leaving openings for ventilating purposes, the lumber cost but $125, the factory being situated not far from a saw mill. Negro labor was used in its construction and the total cost did not pass $300. The building expense can best be ascertained from a reliable contractor in the neighborhood.

Diagram No. 1 shows the arrangement of a plant using steam power and with a capacity of about 10,000 cans a day. The building, 124 feet long by 30 feet wide, is divided into two rooms, a small apartment at the west end, 24 feet long, being used for the boiler and engine, and, if desired, for the storage of some thousands of empties. In the main portion of the building the location of the canning plant is given. A large space being unoccupied can be used, if desired, for the storage of filled cans, although if such a plant is operated anywhere near to its full capacity an additional small building will be needed for storage purposes. The space given up to storage in the diagram can be readily utilized for tables for peelers, etc. As there is always a probability of an increase in capacity, the putting in of special machinery, etc., the unoccupied space is pretty certain to be called into use within a season or two. It is a good plan in erecting a building to always allow space for additions to the plant. A rough shed, running around one front of the building, can be thrown up and the peelers, huskers, etc., stationed there, or, if this is not desired, they can be put to work in the main building. Under such an arrangement of the plant as this the article being canned moves in a circle with as little inconvenience as possible. Changes may suggest themselves as desirable. The diagrams are given merely as suggestions and not as arbitrary rules to guide canners.

Diagram No. 2 shows the arrangement of a plant with a capacity of 5,000 cans a day. It is an excellent model for plants not using steam power. As in diagram No. 1, there is abundant space for a corn cooker, pea separator, or any other special machinery that may be purchased. The main building is 60 by 35 feet, with a semi-enclosed shed at the end which is 50 by 35 feet in size. The



boiler is of 25-horse power. With but a small outlay a change to steam power could be made. Near the boiler is a water tank, elevated about 10 feet. Beneath it is a small pump, connected with the artesian well, which is 15 feet beyond the line of the building. In one corner will be noticed a large wash trough. This is supplied with hot and cold water. Every employe, before beginning work, is required to thoroughly wash hands and arms. Cleanliness is the first rule to be enforced in a canning factory.

If tomatoes, for instance, are being canned, coming from the scalder, which is supplied by hot water from the boiler, they can be dumped on large tables under the shed nearby. Here they are rapidly peeled. If not being hand packed they are then sent to the can-filling machine in the main building, close by the entrance. The can-filler, it will be noticed, is near the capping bench, to which the cans next go. The fire pots on this capping bench are connected by piping with the gasoline tank, buried about 25 feet from the building. A steady flame in this way can be secured for heating the capping and tipping irons without subjecting the building to danger from the gasoline. From the capper's hands the cans, after being placed in the exhaust crate, go to the exhaust kettle. Then they are swung back to the table to be tipped. The next step is to the test tub, where a moment suffices to show whether the capping and tipping have been properly done; then to the process tank, followed by the cooling tub and they are ready for the labeler and the storage room. Everything, it will be seen, is placed so that there is as little moving about as possible. If peaches are being canned, the rotary peach parers, attached to a table in the main building, are brought

into play. From this table the peaches can be passed to another table, running along the same side of the room, to be halved and stoned, if a machine is not being used that does this work, and then sent across the room to a table where the packers await them. This table is near that of the capper, to which the cans next go. This sufficiently illustrates the principle of the arrangement. No matter how large or how small the plant, the same orderly system must prevail or confusion to some extent will ensue. Speed is of great importance about a cannery, and everything that will retard the movements of employes must be avoided.

Storage is a matter properly considered at this point. The best thing to do is to erect a small frame building for the purpose. One about 30 by 40 feet in size will answer except for very large factories. Canners are sometimes advised to put a second story to their factory for storage room. This practically necessitates an elevator, and the supports must be made very strong. If only 50,000 cans are stored the weight is over 100,000 pounds, or say 55 tons. Several Southern canners have met with great loss by the collapsing of buildings of this character. The majority of Southern canning factories will be so located that ample ground can be secured on which to put up a building especially for storage. The labeling and casing are best done in this building. Raise the floor sufficiently above the ground to avoid dampness. See that it is well supported. Provide good ventilation. Such a building can be usually built of rough boards, and need cost but a small sum.

CHAPTER VII.

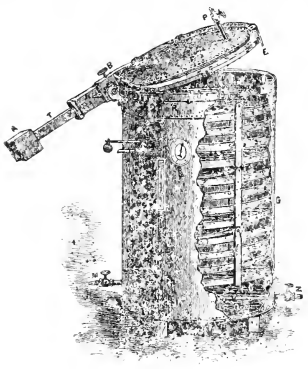
Plants and Their Cost.

Much of the success in canning depends on the plant. The factory that is properly equipped has a decided advantage over the one that is inadequately supplied with apparatus, or which is following methods that have been largely discarded by progressive canners elsewhere. In an era distinguished by the development of labor-saving machinery and the reduced cost of articles into the production of which such machinery enters, those who fail to take advantage, to as great an extent as possible, of the benefits of such improved apparatus, must expect to reap smaller profits than those who have done so. This is equally as applicable to the canning industry as to others. While it is true that it is possible with crude apparatus to pack nearly all vegetables and fruits, yet it must be apparent to anyone that the difference in time and in labor required with a plant of this character and one that is up to the latest standards, is a serious matter. A few articles, of which tomatoes are the principal, can be packed with the most simple method and least expensive plant, but even with them the results cannot be as satisfactory as though a good, complete plant was at hand and steam being used for all purposes. When it is proposed to do a general canning business, to pack most of the fruits and vegetables offering, then the necessity of having some of the special labor-saving machinery becomes even more apparent. Competition is keen and the margin of profit is not so large that one canner can allow the cost per can of his product to run ahead of that of another canner whose goods his must meet in the open market.

The most simple method of canning, and that requiring the least expenditure, so far as the first cost of the plant is concerned, is the one that will be mainly adopted by Southern farmers who desire to establish small canneries at home. In it there is no boiler needed. A furnace, requiring about 4,000 bricks, is built in which the kettles for scalding, exhausting and processing are set. Wood or soft coal can be used as fuel. This method does quite well for tomatoes and good results can be obtained with the fruits and berries. All supply houses furnish practically the same plant with which about 1,500 cans may be packed in a day with sufficient labor. Such a plant will cost, f. o. b., about $225, and is generally catalogued as including the following articles: 1 cast iron scalding kettle, 60 gallons; 1 boiler-iron exhaust kettle (⅛ iron), diameter 36 inches, depth 24 inches; 1 boiler-iron process kettle, diameter 36 inches, depth 36 inches; 4 scalding baskets,

2 exhaust crates, 1 tier; 2 process crates, 2 tier; 3 sets of grate bars, 3 furnace doors, 1 crane, 1 30-gallon gasoline tank, 1 air pump for gasoline tank, 1 air gauge for gasoline tank, 2 gasoline firepots, 1 floor truck, 4 capping steels, 4 tipping coppers, 1 forging stake, 1 vise, 1 thermometer, 1 platform scale, 2 can tongs, 1 syrup gauge, 1 hammer, 25 buckets, 6 capping trays, 2x2 feet; 3 peeling tables, $3\frac{1}{2}$x8 feet; 1 packing table, $3\frac{1}{2}$x8 feet; 1 capping table, 3x8 feet.

There are two kinds of process kettles used, one open the other closed. This plant includes but the open kettle. With a kettle of this character the process is known as the "open bath" the processing or cooking of the vegetable or fruit being done at 212 degrees, or boiling point, and requiring a longer time than in the "closed bath" in which the processing is done at 240 degrees.



CLOSED TOP KETTLE.

Steam is used with the closed top process kettles. It will be necessary only to direct attention to the uses of a few of the other articles specified. Tomatoes, for instance, require scalding in order that their skins may be easily removed. The scalding kettle and the scalding baskets are for this purpose, the tomatoes being placed in the baskets which are of galvanized wire, and the baskets then immersed in the kettle containing hot water. After being peeled and packed in the can the caps must be soldered upon the can, hence the capping steels. The gasoline firepots give a steady flame by which these steels may be kept hot. The gasoline is furnished from a tank buried some distance from the building, and the air pump and air gauge are used in connection with it. After capping the cans are put in exhaust crates which are then placed in the exhaust kettle in which the water is at 212 degrees temperature. They are kept in this kettle sufficient time to exhaust or drive out the air through a little vent. The tipping coppers are used to solder up this hole at once. Then the cans are placed in the process crate and sent to the process kettle where the vegetable, or whatever it may be, is cooked sufficiently to preserve it. The crane is used for swinging the crates to and from the kettles, etc. The uses of trays on which to place and carry cans, of the tables, thermometers, scales, etc., are so apparent as to need no further reference.

Another plant in which only the open bath process is provided, but in which a boiler of 16 horse power is included, complete with all trimmings, piping and fittings necessary for connecting with the tanks and perforated steam coils for the scalding, exhausting and processing tanks, in the place of furnace doors and grate bars, can be bought for about $430. With a plant of this character it is easy to add a closed top process kettle later if desired. The canner will find it to his advantage to make his tables for peelers, etc., at home. Any carpenter can put together tables suitable for this purpose for him. It is also advisable for him to add to this plant a test tub, by lowering the cans into which it will be easy to ascertain if they have been properly capped and tipped. If peaches are to be canned rotary parers should be added. By the time he has paid the freight on either of these plants and added a test tub and a few cheap but valuable additional articles, the outlay will be probably $100 greater than the figures given.

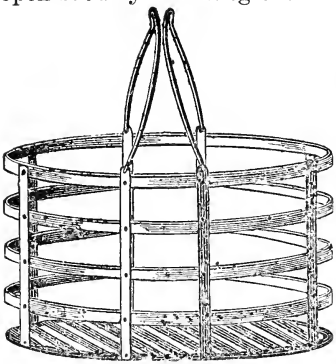
A third "open bath process" plant catalogued by all supply houses, with capacity of 4,000 to 5,000 cans a day, includes a 23-horse power engine with trimmings, all necessary piping, etc., and an increased number of scalding baskets, crates, firepots, capping steels, tipping coppers, buckets, tables, etc., etc., and can be bought for about $575.

Another plant, with closed top steam process kettle, 23-horse power boiler, etc., etc., with a similar capacity will cost in the neighborhood of $700. Getting up to a capacity like this the advisability of adding a tomato can filler and other labor saving machinery will be felt more than ever, and it will be found by the time these pressing wants have been supplied that $1,000 or more has been expended and the factory is quite well equipped to begin business. If a factory is to be started with sufficient capital to put in a plant of 10,000 or more cans daily, the best advice that can be given is to engage a reliable man, who understands the business and who is to remain in the employ of the factory, to assist in selecting the plant. His advice will be found invaluable.

Before selecting a plant decide about what amount of material you are going to handle daily. Don't expect to can 10,000 cans with a 2,000 can plant, and, on the other hand, don't buy a plant with 10,000 cans capacity if you have not got the best of reason to believe that the material to pack nearly that number can be obtained, and if there is not sufficient money on hand or in sight for the heavy expenses of such a large factory.

If you are going to pack upwards of 5,000 cans a day by all means put in a steam plant, with a closed top process kettle. With steam much more can be accomplished with the same labor than by the other method. Vegetables should generally be pro-

cessed in a closed top kettle. Such a kettle can be used as an open bath by throwing back the lid.



PROCESS CRATE.

To properly handle from 5,000 to 7,000 cans a day the plant should include a 35-horse power boiler, a thousand gallon tank elevated, a steam pump to supply the tank with water, a closed top process kettle, an open bath kettle, an exhaust kettle, a test tub, a cooling tub, a tomato scalder and a tomato filler, which will comprise the heavy machinery. Then a 60 gallon gasoline tank is required and the air pump with piping to the fire pots, of which there should be four, and four pairs each of capping and tipping coppers. Then four exhaust crates, one can deep, and six or eight process crates, three cans deep, should be included, as well as a crane and fixtures. The factory should be supplied with eight tables, 8x3½ feet, built slightly inclined from the edge to the center, with a small open space running along the entire center with trough beneath to catch the water from the tomatoes, which can be carried into a tub at the end of the table or out of the building. There should be plenty of knives for the tomato peelers. Three or four tables of the same size should be on hand for peaches, apples and pears. Twelve rotary peach parers, two peach pitting machines and two apple and two pear parers should constitute the machinery for this department. Fifty hoopless water buckets, six large tubs, two syrup gauges, a pair of scales or two, a floor truck and a few other minor things will complete a plant which will necessitate an outlay of about $1,500. This size plant will be very popular in the South. It is the one that will generally be put in. With it and economical management success is assured on this scale. If information is desired as to the various special machines and their cost it can be readily obtained from the manufacturers, any one of whom will be pleased to forward catalogues to parties who contemplate entering the canning business or who are already in it, and who in addition can be relied upon to give all other information needed.

From this it will be seen that to put in one of the smallest plants will cost from $300 to $400, and that if it is desired to carry on the business properly on any very extensive scale, an outfit

costing from $1,000 upwards is required. For these figures nothing but the necessary apparatus for the majority of canned goods is included. If it is desired to can corn or peas on a large scale then other special machinery should be added. With the expenditure of such amounts as have been stated, plants can be put in with which the fruits, berries and nearly all vegetables can be packed up to the capacity indicated, while the few others can be handled in small quantities. By the expenditure of $5,000 for a plant a factory can be admirably equipped for handling practically everything with a capacity of 10,000 cans a day.

A small plant, it must be borne in mind, can be readily increased in capacity at any time. In buying apparatus buy only that which is first-class. It is cheaper in the long run. If you are going into the canning business, go into it feeling that it is to be a life-time business, and common-sense will generally dictate correctly what is the wisest course to pursue.

CHAPTER VIII.

The Amount of Help Required.

The number of employes that will be required to turn out a certain number of cans daily depends on the plant and the skill of the employes. With an inadequate plant more are required than in a factory that is fully equipped with labor-saving apparatus. Slow hands should be weeded out as quickly as possible, no matter whether they are being paid by the day or piece work.

The amount of help needed does not increase proportionately with the output. It will take nearly as many employes, for instance, to turn out 1,000 cans daily as it will to pack 2,000. For the latter figures canners state that they employ on the average twenty-one hands, as follows: Twelve peelers, three packers, one wiper, one capper and tipper, one processer, two labelers and one fireman. Some employ one capper and one tipper, instead of having one man attend to both. With such a force, turning out 2,000 cans daily, the cost of labor would be about as follows: Peelers, averaging 40 cents, $4.80; packers, at 75 cents per 1,000, $1.50; wiper, 50 cents; capper and tipper, $1.50; processor, $2.00; fireman, 50 cents; labelers, at 25 cents per 1,000, 50 cents; total daily pay roll, $11.30. As

stated elsewhere, girls and women can do the work of peeling, packing and labeling. After becoming expert the number of employes may be diminished, but the expense for labor can hardly be kept below these figures. It may be found necessary to employ a man especially to remove filled cans to the storage-room, to assist in casing, and otherwise be generally useful, so, for an output of 2,000 cans it is well to allow $13 per day for labor, or $78 a week. This is as low a figure as is generally reached under an ably economical management.

Increasing the output to 3,000 cans daily does not mean increasing the number of hands by one-third. All that will be necessary is to add about six or eight peelers and possibly a packer, if those engaged are not rapid enough to fill 1,000 cans each in a day. The actual increase in the pay-roll for such an increase in pack will be about $4.00 daily, making the pay-roll for the week about $100.

For an output of 5,000 cans daily the force will have to be increased in several departments. It will be about as follows: One processor at $2.00; two cappers at $1.25 each; two tippers at $1.00 each; two wipers at 50 cents each; fireman, 75 cents; peelers, twenty-five at 40 cents; eight packers at 75 cents per 1,000; one common laborer at 75 cents; one man for casing, etc., at 75 cents. The labeling will be paid for at 25 cents per 1,000. These prices secure good labor. Some Southern canners in country districts will pay less, and others in towns perhaps more for some classes of labor. It will probably also be found necessary to have a reliable party to keep account of the piece work, of the supplies as they are delivered, and to assist otherwise in the clerical work. At the lowest figure it is accordingly well not to estimate lower than nearly $30 a day, or say a weekly pay-roll of $175. By judicious management it may, under some circumstances, be kept below this, but it is well to allow a margin in calculations. With a filling machine, if tomatoes are principally packed, that item may be kept down, a man being employed to operate the filler at $1.00 or $1.25 a day. Certain other improved apparatus will also be found to have the same effect. A conservative Southern canner, however, provides these figures as about as fair an average as can be given prospective canners as a guide to them as to what the expense for labor will be, with a good plant:

Daily output of	2,000 cans	$ 70 00	per week
" " "	3,000 "	100 00	"
" " "	5,000 "	160 00	"
" " "	10,000 "	300 00	"

If there is poor management the pay-roll with the same output may run much higher; with able management it is doubtful

SINCLAIR-SCOTT MANUFACTURING COMPANY,

Hamburg, Grindall and Johnson Sts.,

BALTIMORE, MD.

—WE MANUFACTURE—

SCOTT PEA HULLER, PEA SEPARATORS,
PINEAPPLE GRATERS, SLICERS AND CORERS.
CORN CUTTERS, PROCESS KETTLES,
OPEN PROCESS KETTLES, PROCESS CRATES,
CORN SILKERS, STEAM BOXES, OYSTER CARS,
BOILERS AND ENGINES,
DIPPING CRATES, TANKS, PUMPS, &c.
GASOLINE FIRE POTS, PLATFORM TRUCKS,
CAPPING STEELS, PIPE, FITTINGS,
VALVES, &c., &c.

Special Agents for SPRAGUE GREEN CORN CUTTER.

SEND FOR OUR

LATEST and MOST COMPLETE CATALOGUE

Ever Gotten Up of Canning House Machinery.

if it could be kept down to much lower figures. It is for this reason that especial care has been taken in directing the attention of prospective canners to the necessity of either having money or being in a position where they can secure it until they have so established themselves that they can obtain advances on their future pack from jobbers or others.

CHAPTER IX.

Number of Cans to a Bushel, Etc.

A most difficult thing to determine is the average number of cans that can be filled from a bushel of any article. Hardly any two canners agree as to all the vegetables and fruits they pack. Much depends on the condition of the article canned. The best results are, of course, obtained from fruits or vegetables that are firm and solid. Then some canners may be more wasteful than others, which will considerably affect the yield. Although the following table is based on statements received from a large number of canners it is given with some misgivings owing to the fear that other canners may not produce exactly the same results. The figures that are given are as near the average yield as can be determined when an article best suited for canning is used :

NUMBER OF CANS TO A BUSHEL, ETC.

ARTICLE.	2-LB.	3-LB.
Apples	30	20
Beans, Lima	45	30
Beans, String	30	20
Blackberries	50	33
Corn	45	30
Huckleberries	50	33
Okra	35	23
Peaches, Standard	25	18
Peaches, Pie	35	23
Pears	45	30
Peas	16	—
Plums	45	30
Squashes	30	20
Strawberries	45	30
Sweet Potatoes	30	20
Tomatoes	20	16

The average yield per acre is another extremely difficult statement to give, so much depending on the farmer, his soil, climatic conditions, etc. The following figures are as reliable as can be secured :

Corn,	per acre,	40	bushels.
Okra,	"	175	"
Peas,	"	55	"
String Beans,	per acre,	100	bushels.
Sweet Potatoes,	"	130	"
Tomatoes,	"	300	"

CHAPTER X.

The Canning of Fruits.

[See "What to Can and What to Pay For It," "Times of Exhausting and Processing," and "Standards of Canned Goods."]

In the canning of fruits especial care must be taken for the preservation of the delicate flavors which are so elusive. Keeping quality always in view, using fresh supplies and paying strict attention to the details of the business, this can be accomplished and every can that goes out from the factory made an advertisement that will reflect credit upon its entire output and increase the number of its patrons. Each day's supply of fruits should be canned before the factory closes and none be carried over until another day to permit of softening and probably partial decay ensuing. In order to do this it is necessary to avoid the delivery at the factory of a greater quantity than its capacity will permit of the disposing of within the limits of a working day. Knowing the amount that can be handled, notice can be served on those who are furnishing the supplies as to how much they shall bring in each day. This can be done without much inconvenience to anyone, and the factory will be saved the loss that might otherwise come to it from an accumulation of perishable supplies far beyond its ability to pack.

The Operation.—In general, the canning operation may be described as follows: After the article is ready for canning, having gone through such of the operations of scalding, peeling, coring, etc., as may be necessary, it is packed in the cans according to the standard, of some articles the cans being filled as solidly as possible, of others two-thirds filled, etc. Frequently most of this

work can be done by machinery, that being the more rapid and less costly method. Special machines of various makes, for steam or foot power, can be bought at prices that will repay the packer for including them in his plant. After packing, the cans are generally filled with either syrup of a certain degree or of water, hot or cold, according to the process. These cans are wiped off with a stiff brush, placed in trays and then passed to the capper, a man who places on the top center piece of tin, leaving a small exhaust or vent hole, except under certain conditions when exhausting or the driving out of the air is not required in this way. Capping is also done either by hand or by machines. In large factories the capping machine is a necessity. Several patents are on the market, operated by steam or gasoline, and of various capacities. After leaving the capper's hands the cans are placed in a crate, one can deep, for the purpose of exhausting or driving out the air. This crate is placed in the exhaust kettle with 212 degrees of heat, and kept there a certain length of time varying with the fruit or vegetable. As soon as taken from the exhaust kettle the cans are tipped, that is, the vent hole is immediately soldered up. The cans are then placed in a test tub for testing in hot water (212 degrees). By the immersion of the cans into this water it is easily ascertained if the capping and tipping has been properly done, the presence of any holes being accurately determined by the bubbles that arise to the surface. In the South at present, skilled cappers and tippers not being always obtainable, the testing of the cans in this manner is recommended. While there may be but a small proportion found that require attention the saving effected in this way, coupled with the absolute certainty felt that the cans have gone out in proper condition, repays for the extra time consumed. The cans are then ready for processing, or cooking. They go into another crate, two or three cans deep, and are placed in the process kettle. There are two kinds of these kettles, open and closed. In the open bath, as it is termed, but 212 degrees of heat can be obtained; in the closed bath any required temperature is possible, the processing in this being done at 240 degrees. The time the cans are kept in the process depends on the contents and is longer in the open than in the closed bath, as will be seen in the chapter giving the time of exhausting and processing. This concludes the actual work of canning. The cans are then taken to the cooling tub, in which cold water is continuously flowing, and by immersion in it cooled sufficiently to permit of handling. The crate containing them is then placed on a truck and the cans taken to the labeling department.

Peaches lead the list of canned fruits, and, as previously stated, will undoubtedly become the great canned product of the

South. In a section where peach trees are being set out by the hundreds of thousands every year, where they bear abundantly and where, after the Northern, Western and home markets have been supplied, there will be, within a few years, vast quantities undisposed of, the canning of them must soon occupy the attention of growers. Southern peach growers will be forced into the canning business in self-defense, unless outsiders begin canning operations in the vicinity of their orchards on a scale sufficiently large to exhaust their surplus. That this is recognized now is proved by the recent establishment of several canneries in the heart of the peach district and the announcement that others will be soon located there. The demand for this luscious fruit in tin is only surpassed by the demand for it in the raw state. There is no canned fruit of which there is the same almost universal and very rapidly increasing consumption. Year after year its packing more and more engrosses the attention of those in the business who are so situated that they can obtain supplies of it, and Southern canners can find nothing that will better repay them than this product of their factories. The more care they bestow upon the canning of peaches the greater will be their profits from them. By a wise use of the opportunity open to many of them it need be but a short time before Southern canned peaches will rule the markets.

There are several qualities of peaches and the packer must exercise care in the selection of them. It pays better to give a good price for good stock than to secure poor stock at a lower cost. The difference in the price obtained for the different grades of canned peaches more than offsets the difference in the price of the fruit, and in the cost of handling the superior article. The peaches should be brought to the factory in bushel crates, so that they will not be bruised or mashed. They should not be too ripe. Firm, solid fruit, free of worms, should be insisted upon. They should be assorted by the grower, white and yellow peaches being kept apart as they are packed separately. Fruit of an exceptionally fine quality, packed in heavy syrup, is classed as "extra." The well-developed ripe peaches are carefully selected, peeled and packed in high syrup and offered as first or standard quality, commanding fine prices and bringing the canner excellent profits. Peaches of an inferior quality are packed in like manner and offered to the trade as seconds. All peaches that are too small to peel and otherwise unfit for marketing as first or second quality, are canned as pie peaches. These pie peaches are not peeled, but are pitted and halved. Peaches that are "full ripe" and a little soft must be peeled by hand, exhausted 3 minutes and processed 6 minutes. With any longer process they may go to pieces.

Peaches are canned in 2 and 3 lb. cans, the majority in the latter size. Rotary knives that peel peaches satisfactorily can be obtained at $15 per dozen. Small knives for this work by hand are catalogued at $1.50 per dozen. Peach pitting machines can also be bought ($6) which give good service.

After the peaches have been peeled, halved and pitted, work which is rapidly done by girls, the cans are packed as full as possible without damaging the fruit. The cans are then filled with hot or cold syrup, the latter being preferable, for table peaches and water for pie peaches. Dipping machines can be had for this purpose. The cans are then capped and placed in the exhaust crate. From the exhaust kettle they go to the tipper, who closes up the exhaust or vent, and they are then ready, after testing, for the processing crate and processing kettle, which completes the work so far as the canning is concerned.

Apples are generally spoken of by Southern canners as a slow seller. Next to peaches more apples are probably now canned in the South than any other fruit. The experience of Southern canners with this fruit is not such as to justify any canner in handling them in large quantities if he is able to obtain other fruits and suitable vegetables. The rotary knife used in paring peaches will answer for the same purpose with apples, or, if it is desired to unite the three operations of paring, coring and slicing in one labor-saving machine, an apparatus for this work is on the market at the nominal price of $5 per dozen. Apples are put up in 3-lb. and gallon cans as a rule. After peeling, coring and quartering the cans are filled with the fruit. If cold water is used the can is exhausted, but if hot water at the boiling point is used the cans are capped and tipped at once and passed over to the processor.

Pears are another fruit now being extensively cultivated in the South. Every year finds the number of orchards of this fruit increased and old ones greatly enlarged. The area in which the tree will thrive does not seem to be limited, and the Southern pear crop, already large, promises to assume immense proportions soon. It is a fruit as easily canned as apples, and Southern canners report that they have had better success in marketing it and have found it more profitable than that fruit. Pears are generally packed in 2-lb. cans. They are peeled, cored and quartered. The cans are filled. Syrup is used. They make a delicious dessert, and the demand should increase steadily.

Plums are another fruit that thrive in the South. The trees in this section bear an abundance of fruit. Canners will probably find it profitable to pack *fine* fruit in moderate quantities. Plums have not been handled to any great extent by Southern

Canning in the South

You will Save Money on Your Purchase of

CANS

BY ADDRESSING

DANIEL G. TRENCH & CO.,

CANNING
FACTORY
OUTFITTERS,

CHICAGO, ILL.

canners. California has mainly supplied the markets with this fruit. The Southern canner ought to be able to compete with his Pacific coast competitor and find large profit in the article. It will be well to experiment with the fruit for a season or two until it is ascertained exactly what can be done with it. Put it up in 2-lb. cans with syrup, using only the best fruit.

Grapes are another fruit that is practically not canned at present in the South, and, in fact, to little extent anywhere outside of California. The South raises magnificent grapes now, and can probably grow any variety that is needed. Southern canners should experiment with them also. The best way to can grapes is furnished for "Canning in the South" by a South Carolina canner, who has put up small quantities that have received the highest praise. He says: Select only the finest quality, sweet, ripe and firm. Fill the can with them, being careful not to bruise the fruit. Take the juice of other grapes, add sugar until syrup registers 10 degrees and fill up with this syrup. Practically all that is in the can is grapes and their own juice. Wash the grapes in cold water and see to it that they are free from any foreign substances. Pack in 2-lb. and 3-lb. cans. Grapes can also be packed in water, hot or cold.

Another method of preparing grapes in cans that is recommended is as follows: Stew or boil the grapes until the skin is tender; then put them through a "cyclone" pulping machine, which will rid them of all the seed and hard skins, leaving the grape and juice. This can be sweetened to suit the taste and canned. Grapes prepared in this way make excellent pies. They only want introduction to become popular. The "cyclone" machine referred to is useful with other articles, reducing pumpkin, squashes, sweet potatoes, etc., to a fine pulp and leaving it entirely free from seed; it can also be used for reducing tomato skins to pulp. In this connection attention may also be directed to the fact that the skins of peaches, apples and pears can be handled in a similar way. After reducing them to pulp, sweeten and add a little flavoring, cinnamon or cloves, can and sell as apple, peach or pear sauce. This is excellent for pies and desserts and prevents what might otherwise be a waste.

Cherries also grow well in certain parts of the South. Nothing can be done with them in the coast sections. Fruit that is almost ripe is used. The common or pie cherries should be pitted. Cherry seeders, hand power, can be had at $5 per dozen. Southern canners will hardly engage in the canning of cherries on such a large scale as to require the expensive power machines capable of pitting 100 to 200 bushels a day. Choice white and yellow fruit for the table is not pitted. These cherries are packed whole

with syrup. Factories in cherry growing sections should pack somewhat of them.

Guavas, a fruit canned and made into an excellent jelly in the Bahamas, grows throughout South Florida. Canners in that State should pack this fruit in small quantities, as it is comparatively unknown and must force its way into the markets. Put up in two and three pound cans, with syrup of 10 degrees or more. Guavas should be handled like peaches. Efforts to secure the time of processing failed.

Pineapples have been purposely reserved for the last of the fruits. At present but a small amount of pineapples is canned in Florida, the only pineapple-growing State of the South. Everything, though, indicates a rapid expansion of this branch of the industry in that State. Northern packers, realizing the absurdity of having the factory a thousand miles away from the spot where the fruit is grown, are preparing to erect plants in South Florida for the especial purpose of canning this fruit, which, next to peaches, is the most delicious packed and one of which there must be an enormous consumption in the near future. It has only been within the past two or three years that much attention has been given to pineapple culture in Florida. Experiments having shown that the raising of the fruit on an extensive scale was immensely profitable, the acreage devoted to it has rapidly increased. Several factories have been put up for the canning of the fruit, and there is no reason why a score or more should not be established in that semi-tropical region. The canning of the fruit should keep abreast of the increase of the crop.

Pineapples are canned in three ways—whole, sliced or grated. In the first method the rind is removed sufficientiy to eliminate the eyes, and syrup of 10 to 15 degrees is used. The sliced is the most popular form. The rough rind is cut off by girls. The pieces can then be passed through a machine which pares off sufficiently to remove the eyes and cores and slices at the same operation. If an extra standard is not being sought for, the pieces after being pared sufficiently to remove the eyes can be sliced by machine and the core not removed. In either case syrup of about 10 degrees is used. The very finest pineapples, eyeless and coreless, packed in 20 degrees of syrup, command fancy prices. Pack mainly in 2-lb. and 3-lb. cans, with a few gallon cans. The grated pineapple is mainly packed in 1-lb. cans. Special graters, slicers, etc., are on the market.

Berries.

In the canning of berries the open bath process is preferable. Care must be exercised not to process into mushiness. With the

closed bath process there is greater danger of this owing to the intense heat, even with the difference in time. Do not pack heavily of any berry. While easily packed blackberries do not find a ready market, nor do the blue or huckleberries. Strawberries find the best demand of all, and give the best returns. Berries in jams and jellies can be made a side branch of canning with ease.

All berries are handled about alike. Care is taken to remove the caps and any leaves and dirt. This is rapidly done by girls who spread the berries out on tables, at the same time throwing aside those that are not firm. Blackberries and blue or huckleberries are put up in 2-lb. cans, nearly full, with water. If hot there is no exhausting. With strawberries the cans, 2-lbs., are about two-thirds filled with syrup of 10 or more degrees. No strawberries that are not of first-class quality should be canned.

[N. B.—The prices given of machinery in this and succeeding chapter are those found in catalogues of manufacturers and supply houses. A good discount is frequently allowed for cash.]

CHAPTER XI.

The Canning of Vegetables.

[See chapters on "What to Can and What to Pay For It," "Time of Exhausting and Processing," etc.]

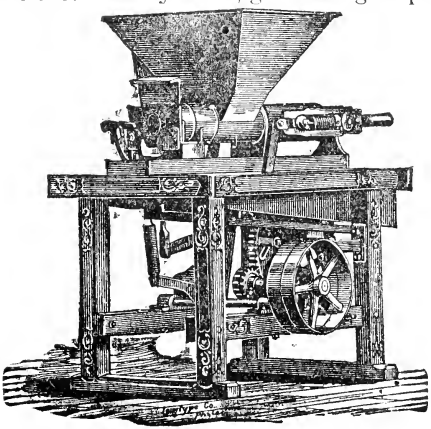
The canning of vegetables is on the same lines as the canning of fruits. The same injunctions as to the packing of fresh supplies of good quality and the constant endeavoring to put up goods equal to the best grades packed elsewhere likewise hold good. The use of improved machinery, cheapening the cost per can through increasing the amount of work that can be done by a limited number of employes, is recommended. Southern canneries should endeavor to profit by the experience of canners in other sections of the country, and, sufficient money being at hand, begin as nearly as possible on the plane where they now are.

Tomatoes are the leaders in canned vegetables. They are one article that can be packed heavily without fear. Tomatoes require a good, rich soil, can be easily grown, yield abundantly, and are one of the best paying crops the farmer can raise for the canning factory. They are contracted for by the bushel or ton—in

the South generally by the bushel, being gathered in crates and delivered at the factory in them. From the crates they are placed in scalding baskets of galvanized iron and wire, costing about $24 per dozen, and dipped in tubs or troughs containing hot water. In two or three minutes they are in a condition in which the skin can be easily removed. The scalding baskets are then carried to the peeling tables and the tomatoes dumped upon them. An excellent table for this purpose, as is stated in a previous chapter, is made with a slight slant from each side toward an opening at the center with a trough under it to carry off the water, thus protecting the persons of the peelers. The skins are saved, in well-conducted factories, to be boiled up for the making of ketchup. The tomatoes are peeled by hand with knives.

[There are improved scalders to be had, perforated receptacles, of several sizes. Each style is pivoted over the tank containing hot water into which it can be lowered and raised at will to an incline sufficient to dump the tomatoes out into buckets. The prices of apparatus of this character range, according to size, from $90 up. In small Southern factories the hand method of scalding referred to above is generally in use.]

From the peeling tables the tomatoes go to the packing table, or to the can-filling machine, where the cans are filled full with them. The tomatoes should be packed as whole as possible. This is either done by hand, girls being employed for the work, or, as indicated, by a machine operated either by foot or steam power, of which the accompanying illustration will give an excellent idea. A machine will fill about 10,000 cans a day, operated by foot power, and requires a man. A woman can pack 1,000 to 1,500 cans by hand. A machine of this character, foot power, costs $75.



A CAN-FILLING MACHINE.

After being filled, there are two methods open to the canner. That generally followed in the South is to pass the cans to the capper and have them capped

but not tipped. From the capper they go to the exhaust kettle and from the exhaust to the tipper and then to the process kettle, the time the can is kept in each being given in the table in Chapter XII. The other method is not known to Southern canners, as a rule, and it is due more to this fact than anything else that it has not been to some extent adopted. Following it, the cans after being filled are *both capped and tipped* and the exhaust entirely dispensed with, the cans being sent directly to the process kettle. This permits of much more rapid work, one man doing the capping and tipping of the cold cans very quickly. In response to a letter, Mr. J. E. Diament, of Cedarville, New Jersey, a packer of long experience, writes as follows:

"I have been in the tomato packing business for thirteen years, and in all that period never exhausted my goods. It takes a *stronger can* to put tomatoes up in without exhausting. I process my goods forty-five minutes as a rule, and never less than forty minutes."

As Mr. Diament packs from 750,000 to 1,000,000 cans of tomatoes a season, his letter is certainly worthy of consideration. The open process kettle should be used with this time. Many packers contend that the system of both exhausting and processing is safer. Southern canners will do well to at least experiment with the latter method, keeping some cans packed in this way to be examined subsequently, and the relative merits of the two methods determined as indicated by the quality of the tomatoes when turned out of the cans.

There are also what are known as "continuous process machines" on the market in which the cans are carried along on endless chains through patent exhaust and process kettles; the speed at which they move being regulated at pleasure to suit the contents. These machines vary in cost according to capacity, one with a capacity of 5,000 cans daily being catalogued at $800.

Corn is next to tomatoes the canned vegetable most in demand. The margin of profit is small, and to make much money packing it it should be handled on quite a large scale and proper machinery used. Only sugar corn, a good, tender article, is used. The corn is "shucked" or "husked" by boys and girls. Southern canners pay 1 cent per dozen ears, or 3 cents per bushel in the husk, for this work. The defective ears should be thrown out. The corn must then be cut from the ear. While this can be done by hand it is done more expeditiously, more satisfactorily and cheaper by one of the improved cutters, which remove the kernels whole close to the cob, or otherwise as may be desired. There are several of these machines on the market. A hand power cutter can be obtained for $90; the power machines are $200 and

SLEEPER MACHINE COMPANY,

35 CONGRESS STREET, ROOM 31,

BOSTON, - - - MASS.

Machines for the Manufacture of TIN CANS,

VIZ:

Sleeper Side Seaming Machines,
Sleeper Heading Machines,
Sleeper Rolling Mills.

Also have in process of construction Machines for Floating and Testing the Cans, which are expected to be ready for the business of 1894, thus completing the series of machines and insuring a product of 1300 to 1600 cans per hour, and employing one young man and four or five boys or girls only to attend to them.

ADDRESS—

SLEEPER MACHINE CO.,

35 Congress St., Room 31, BOSTON, MASS.

upwards. After being cut from the cob the corn is poured into a corn silking machine, which separates the silk and pieces of cob from the cut corn. A machine of this character can be bought for $50. If the corn is being packed according to the "moist pack" method, the kernels of corn are cut whole from the cob and after the silk, etc., is separated from them are packed into 2-lb. cans. The standard provides that a can shall cut out full of corn. If young corn is being used the cans must be packed more solidly than if older corn is the material packed. The danger in canning corn lies in packing the cans so solidly that they will be unable to stand the strain, or in improper processing resulting in a few days in the corn becoming sour, the resulting gases causing the cans to either burst or swell. The can is next filled with brine, a dipping machine costing from $50 up, according to capacity, being used for this purpose, wiped, capped, exhausted, tipped and processed.

If corn is to be "dry packed," the kernels are cut from the cob to about half their depth, the remainder of the grain being scraped by the knives, making a pulp. The silk, etc., is removed from the kernels as in the first method, and the corn—kernels and pulp—is poured into the hopper of a self-feeding corn cooker, a machine costing about $350. In this machine the corn passes through a shaft in which it is cooked by steam, at the end passing directly into the cans, which are automatically removed when filled. The cans are at once capped and tipped and then processed as in the other method. More corn is required in the "dry" than in the "moist" pack, half of it being pulp, and it naturally filling in more solidly. The "dry" is the more expensive method, and through its requiring costly apparatus is little used in the South at present. Southern canners should secure tender, sweet corn or not pack it at all. They should provide themselves with the improved cutters and silkers and should exercise the greatest care throughout. Corn of excellent quality is packed so extensively in the East and West and sold so cheaply that the public has long since become accustomed to a good article, and is quick to distinguish an inferior one and discriminate against it. As in other canned products, the very best canned corn returns the largest profits. For canning small quantities of corn, the rule at present in the South, corn-cutting knives can be bought for a small sum and the grain removed by hand after the silk has been removed by stiff brushes, also of insignificant value. This is only possible, of course, with the "moist pack."

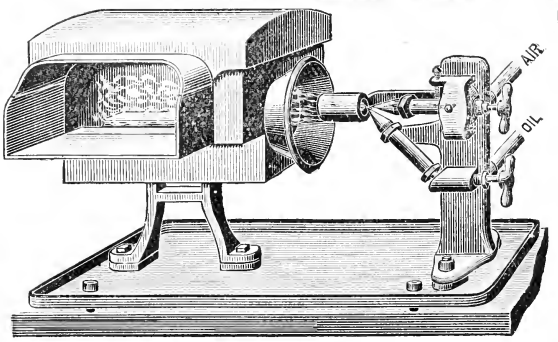
Peas are another good paying feature of the output of the canning factory, but, like corn, to be handled in any large quantity they require special and very expensive machinery to pro-

ATTENTION CANNERS!

THE CLARK

Kerosene Oil Heating System

Economy, Safety and Durability.



2,000 Systems Now in Operation.

For heating Soldering Irons, Capping Machines, Floaters, Solder Baths, Tinware Manufacturing Machinery, Etc. It will be to your interest to consider and investigate this superior system before adopting any other for the purpose. Its economy alone over any other system will pay for the outfit in one season. Write for illustrated catalogue that will explain its many merits.

THE CLARK NOVELTY CO., Rochester, N. Y.

G. A. CROSBY & CO., Western and Southern Agents.

F. A. ROBBINS' PRESS WORKS, San Francisco, Cal. Pacific Coast Agents.

AGENTS FOR THE ACME AUTOMATIC OIL ENGINES.

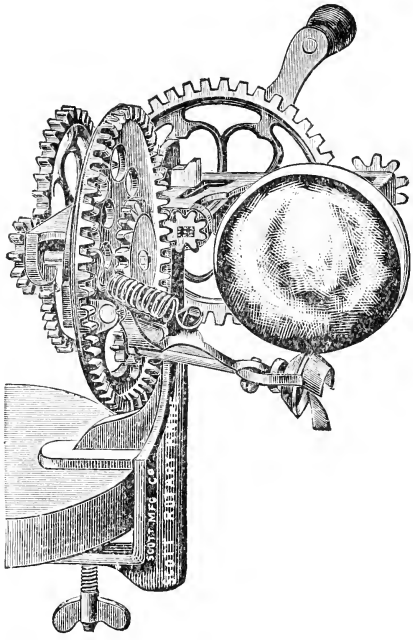
duce satisfactory results. The peas are first hulled or shelled. A machine having the capacity to hull sufficient "Early Junes" to fill about 7,500 cans a day will cost about $1,500. Working "marrowfats," sufficient will be hulled for twice as many cans. Throughout, the packing of peas is a fascinating business, this and the other apparatus being marvels of ingenuity in the work they accomplish. From the huller the peas are taken to the separator, which assorts them into the several sizes at the same time freeing them from foreign matter. Of these machines there are several on the market ranging in price from $200 up to $500 or more. A very acceptable separator can be secured at the minimum figure. The black eyes and yellow peas should then be removed. A blancher is next brought into service, a perforated receptacle of light galvanized iron holding about a bushel, with handles by means of which it is dipped into scalding water until the skins show signs of contracting. These blanchers cost but $2.50 each. The blanching completes the handling of peas in so far as it differs from that of other vegetables. Two-pound cans are then filled within about two-thirds of an inch of the brim with them, dipped in hot brine, wiped, capped and so on.

Few Southern factories are at present equipped for doing much with peas, and it is hardly probable that many will be for some time to come. It has not been the intention in citing these facts to dissuade Southern canners from packing peas at all. Far from it. They can be hulled by hand, boys and girls doing the work, and then separated in three or more grades, as desired, by the use of sieves, working over boxes, costing but little money and made at home if desired. Wire for the separating of the peas in this way can be bought from any dealer. In this way the cost of the apparatus is reduced to an insignificant figure. For putting up small quantities good results can be achieved in this crude fashion. Grade the peas according to size as carefully as possible. There is money in peas, and when they can be obtained in sufficiently large quantities it will prove a profitable outlay to provide the special machinery referred to.

String Beans are becoming more sought after and are expected to become a leading article in the canning line. The strings are removed by boys and girls, old, tough beans being thrown out. The long beans should be broken in half. This work should be done as the stringing proceeds. They are then blanched, in a manner similar to peas, etc., and the cans, 2-lbs., packed with them, brine being added. If cold brine is added the cans after being capped are exhausted. If brine of 212° is used they are capped and tipped at once

SCOTT'S PATENT ROTARY KNIFE PEACH PARER.

THE ONLY PEACH PARER.



THE BEST APPLE PARER.

Patented Sept. 21, 1880—April 4 and 18, 1882.

The Rotary Knife is the only machine ever made that will pare peaches perfectly, rapidly and satisfactorily, and will pare soft, uneven or bruised fruit.

As it is the only machine that successfully does the work, it is without a rival. It has been remodeled, improved, and strengthened, and is all we claim for it—*Perfection.*

—MANUFACTURED BY—

SINCLAIR-SCOTT MFG. CO.,

BALTIMORE, MD.

and sent to the process kettle. In regard to brine, it may be well to state that what is meant is water in which just enough salt has been dissolved to give it a distinctly salty taste. LIMA beans, as far as can be ascertained, are not handled in the South. Not one of the numerous canners written to had packed them in this section, although several had done so in the North. Use tender beans. After shelling, work for boys and girls, pack the cans, 2-lbs., add the brine and proceed as with other vegetables.

Okra, as has been stated before, is one vegetable of which Southern canners must be careful. Do not pack heavily of it under existing circumstances. It may gradually force its way to the recognition it deserves in the North and West, but the fact that it has not yet done so to any extent reduces the demand for it to a limited area. Use only the tender okra, which should be blanched from 10 to 15 minutes. Pack in brine in 2-lb. cans.

Okra and Tomatoes are a pleasing combination gradually coming into demand. It makes an admirable soup and must force its way to the front. Once it is introduced it will make rapid headway on its merits. Pack lightly, though, for the present. The okra should be blanched and chopped up somewhat. Put one-fourth okra and three-fourths tomatoes into the cans—2's and 3's. Cap and proceed as usual.

Succotash, in the Northern significance, is a union of green corn and lima beans, about two-thirds of the former to one-third of the latter, put up in brine and processed as corn. Some Southern canners have another succotash, a combination that is, if anything, more pleasing to the palate. It is corn, lima beans, okra and tomatoes, in about even quantities, making a fine soup. Pack lightly of each, designating difference on labels. No brine is used with the latter, and it is processed about the same time as corn. Whenever corn and beans are used, owing to their swelling while cooking, allow a space of from one-half to two-thirds of an inch in cans in packing.

Sweet Potatoes, or as they are sometimes called, yams, yield abundantly in the South, and will be handled extensively by Southern canners. They are blanched until the skin cracks; then taken on forks and peeled, sliced and quartered. Nothing is put in the cans—3's and gallons—with them, and do not sink them deep enough in the exhaust kettle to allow the water to flow into the cans. Potatoes grown in Georgia and some other Southern States are especially full of saccharine, and make fine pies. Southern canned sweet potatoes are expected to meet with high favor in other sections of the country as well as at home. Pack them in moderate quantities for a year or two until this demand can be better gauged than at present.

Asparagus is now being raised on a large scale on the sea islands of South Carolina and the primary success has been so great that its culture must soon spread all along the coast. Fancy prices are obtained for it in the Northern markets in the early season. After the Northern asparagus comes in competition and the profits are greatly reduced the canning of it will be in order. Packing in the latter part of the season special care should be exercised not to can the old stalks which are tough and stringy. Brine is used as in beans. The 3-lb cans are mainly used.

Squashes are packed to a limited extent by canners in Tennessee and one or two other States. The packing of much more than what may be required for the local demand cannot be recommended. Fine squashes are raised, or can be raised, in practically all parts of the South. Use the tender squashes, peel, slice and then mash into pulp. If packed largely machines can be obtained to do this work costing $150 and upwards. It can be packed by hand, or if a tomato filling machine is in the factory it will do the work effectively. Nothing is added to the cans, 3-lbs., which are packed full, capped, exhausted, etc.

Oysters, Clams, Terrapin, etc. At Savannah, Brunswick, Fernandina, Apalachicola, Mobile, Corpus Christi, and

BALTIMORE LABEL PRESS,

BALTIMORE, MD

FRUIT and VEGETABLE LABELS

Lithographed or Printed. In Stock, or Special Designs to Order.

Tobacco and Cotton Plaid Labels

A SPECIALTY.

Send for SAMPLES AND ESTIMATES.

Office, 109 East Baltimore Street,

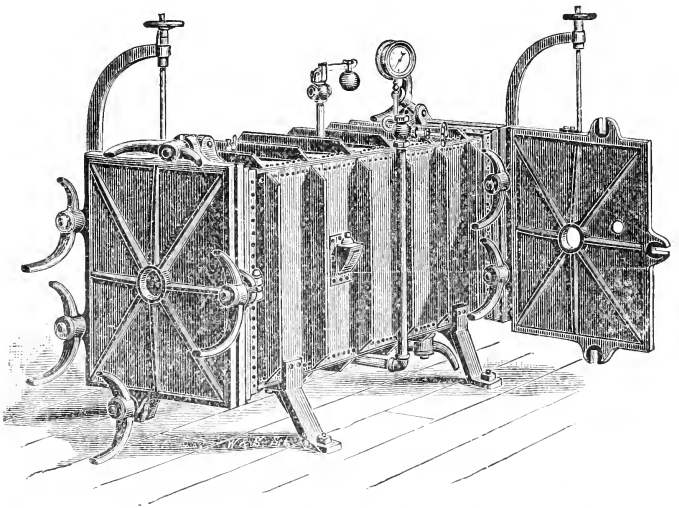
. . . BALTIMORE, MD.

other points on the Atlantic and Gulf shores of the South, canning factories are found devoted especially to the packing of oysters, clams, terrapin, etc., of which there is an abundant supply generally to be had. These factories must soon be supplemented by many others in the same line. Men thoroughly acquainted with the situation look to the South as the future great source of supply of canned oysters; the bivalve flourishes best in the waters of this section. Several Southern states have adopted laws regulating the taking of oysters and others will soon follow suit. Natural beds are being protected and every encouragement being given to the establishment of artificial ones. Coast surveys have demonstrated that there are immense areas of Southern waters where enormous quantities of oysters of good quality can be cultivated. It is not the intention here to go into the details of this branch of the canning business. More capital is required for it to be successfully carried on than in the other lines. The oyster canning factory should be located on the water front and as near the beds as possible. The oysters are lifted from the barge, or whatever vessel they are brought to the factory in, dumped into small cars which are run over tracks into steaming chests where they remain until the shells are open. The oysters are then taken to the shuckers who are paid by the bucket or gallon After being shucked and weighed, they are washed in running cold water and packed. There are several sizes of cans used, the standards being 5 and 10 and 6 and 12 ounces. Brine containing about 3 per cent. of salt is used and the cans put through the usual course of wiping, capping, exhausting, etc. Clams are handled in a similar manner, but 1-lb., 2-lb., and 3-lb. cans are used. Terrapin is cooked until more than half done and then put through the customary process. Fish are cleaned as if for the table, being washed thoroughly. They are cooked until more than half done, packed solidly in cans, brine added, wiped, capped, etc. The bones are removed as much as possible. The exhaust is the same as with fruits and vegetables. Fish are processed about 20 minutes. They are generally canned in 1-lb. and 2-lb. cans. There is apparently no good reason why many of the numerous varieties of fish found in Southern waters should not be extensively used for canning. Experiments should be made with all varieties that offer the slightest inducement. There must be many of the more than 200 varieties of fish suitable for food found in this section that can be canned successfully and a demand created for in that convenient form. Southern fish should become an established article of canned food in the various markets of the country.

DANIEL G. TRENCH & CO.,

CHICAGO,

Canning Factory Outfitters.



THE BAKER STEAM BOXES

are the best Steam Boxes made. They outclass anything of the kind made elsewhere in the country.

They are made in two sizes.

Full detailed description, prices and testimonials sent on application.

CHAPTER XII.

The Time of Exhausting and Processing.

The time of exhausting and processing opens up a fertile field for discussion. Through the assistance of Southern canners whose goods have earned a reputation for quality, and from other sources of information, the following table was prepared. It will be found of continuous value to canners. The advice of experienced processors is against the use of the closed bath process for berries or for fruits that are soft, the heat being too great, and it being an easy matter to overcook and make the fruit liable to go to pieces in the can, a matter that has caused some complaint from jobbers heretofore.

The closed bath process is not absolutely necessary, except for corn, clams, oysters and succotash, although it gives quicker and better results with some other articles. The great majority of canned goods can be processed in the open kettle, but it is advisable to have a closed one in addition, if possible. The information contained in the chapters on the canning of fruits and vegetables gives about all else that it is necessary to say on this subject.

Time of Exhaust and Process.

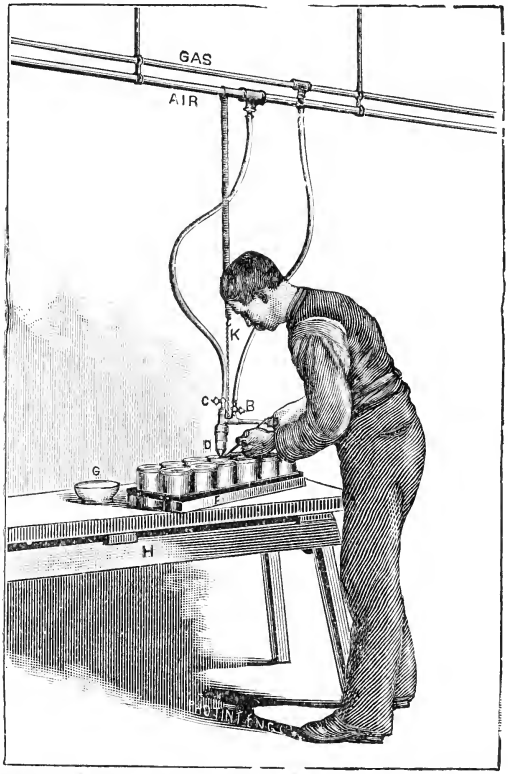
ARTICLE.	EXHAUST AT 212 degrees. Minutes:	OPEN BATH PROCESS 212 degrees. Minutes:	CLOSED BATH PROCESS 240 degrees. Minutes:
Apples	3	15	3
Asparagus	10	45	30
Beans, Lima	10	—	35
Beans, String	10	45	30
Blackberries	3	7	3
Cherries	7	12	4
Clams—1's	10	—	20
Clams—2's	10	—	25
Corn	10	—	40
Grapes	15	11	4
Huckleberries	5	7	3
Okra	10	35	20
Okra and Tomatoes	10	35	20
*Oysters—6 oz.	10	—	16
Oysters—12 oz.	10	—	20
Peaches	5	10	4

*Five and ten ounce oysters are two minutes less on process respectively

DANIEL G. TRENCH & CO.,

CHICAGO,

Canning Factory Outfitters.



THE BAKER HOLLOW STEEL TIPPING TOOL.

——THIS IS A GEM.——

Once seen in operation you would not be without it at double its cost.
Send for Description, Price, Etc.

ARTICLE.	EXHAUST AT 212 degrees. Minutes:	OPEN BATH PROCESS 212 degrees. Minutes:	CLOSED BATH PROCESS 240 degrees. Minutes:
Pears	5	12	5
Peas	10	—	20
Pineapples	10	20	8
Plums	5	12	5
Pumpkins	10	40	15
Squashes	10	35	15
Strawberries	3	6	2
Succotash	10	—	40
Sweet Potatoes	5	15	5
Tomatoes	10	30	20

[In case exhausting is dispensed with, increase time of process by about one-fourth. As mentioned in the article on tomato canning, most canners seem to regard the method by which the cans are exhausted as the most reliable.]

CHAPTER XIII.

Standards of Canned Goods.

The following have been accepted as the standards by reputable packers throughout the country. Southern canners must observe them.

Apples.—Pared and cored, clear in color, cans to be full of fruit, put up in water.

Blackberries.—Cans to cut out not less than two-thirds full after draining; fruit to be sound, put up in water.

Cherries.—White Wax. Cans to be full of fruit, free of specks and decay, put up in not less than ten degrees of cold cane sugar syrup.

Cherries.—Red. Cans full of fruit, free of specks or decay, put up in water.

Gooseberries.—Cans to be cut out not less than two-thirds full after draining, fruit unripe and uncapped, put up in water.

Grapes.—Cans full, fruit free from decay and put up in cold water.

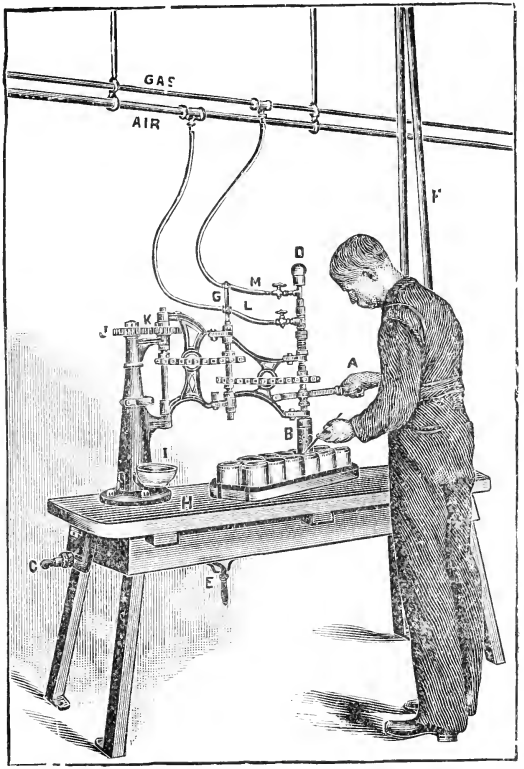
Egg Plums and Green Gages.—Cans full, whole fruit, free from reddish color or specks, put up in not less than ten degrees of cold cane sugar syrup.

Peaches.—Cans full, fruit good size, evenly pared, cut in half pieces, put up in not less than ten degrees of cold cane sugar syrup.

DANIEL G. TRENCH & CO.,

CHICAGO,

Canning Factory Outfitters.



THE BAKER SINGLE STEEL CAPPING MACHINE.

(HOLLOW STEEL—HEAT INSIDE.)

This is one of the latest and best devices in the line of canning machinery and has sold this season like hot cakes.

Pie Peaches.—Cans full, fruit sound, unpared, cut in half pieces, put up in water.

Pears.—Bartlett. Cans full, fruit white and clear, pared, cut in half or quarter pieces, put up in not less than ten degrees of cold cane sugar syrup.

Pears.—Bell or Duchess. Cans full, fruit pared, cut in half or quarter pieces, put up in not less than ten degrees of cold cane sugar syrup.

Pine Apples.—Cans full, fruit sound and carefully pared, slices laid in evenly, put up in not less than ten degrees of cold cane sugar syrup.

Plums and Damsons.—Cans full, sound fruit, put up in water.

Quinces.—Cans full, fruit pared and cored, cut in half or quarter pieces, put up in not less than ten degrees of cold cane sugar syrup.

Raspberries.—Cans to cut out not less than two-thirds full after draining, fruit to be sound, put up in not less than ten degrees of cold cane sugar syrup.

Strawberries.—Cans to cut out after draining not less than half full of fruit, which shall be sound and not of the varieties known as seedlings, put up in not less than ten degrees of cold cane sugar syrup.

Whortleberries.—Cans full, fruit to be sound, put up in water.

VEGETABLES.

Asparagus.—Cans full of young and tender asparagus, liquor clear.

Lima Beans.—Cans full of green beans, clear liquor.

String Beans.—Cans full, beans young and tender and carefully strung, packed during growing season.

Corn.—Sweet corn only to be used, cut from the cob while young and tender, cans to cut out full of corn.

Okra.—Cans full of young, tender okra, with clear liquor.

Peas.—Cans full of young and tender peas, free of yellow or black eyes, liquor clear.

Pumpkin.—To be solid packed as possible, free from lumps and of good color.

Sweet Potatoes.—Cans full, dry packed.

Succotash.—Cans to be full of green corn and green lima beans.

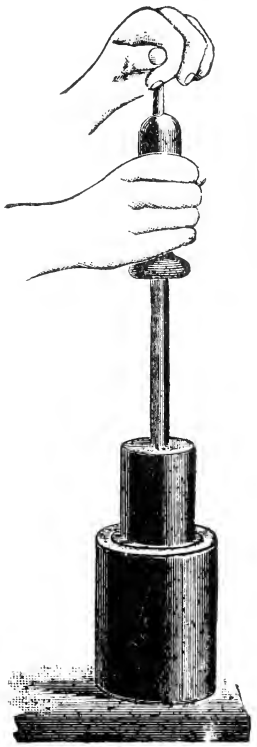
Tomatoes.—Cans to be reasonably solid, of good ripe fruit, packed cold.

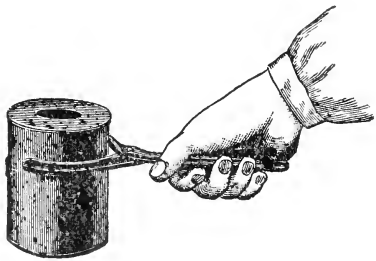
Oysters.—To cut out not less than five ounces for No. 1 and ten ounces for No. 2 cans, of dry meat after liquor is drained off. To be good size and bright color.

DANIEL G. TRENCH & CO.,

CHICAGO,

Canning Factory Outfitters.





Can Tongs,

Capping Steels,

Coppers,

And all CANNERS SUNDRIES kept in stock and orders filled promptly at lowest prices.

CHAPTER XIV.

The Marketing of Canned Goods.

The Southern canner should, first of all, cultivate the home market. Drive canned goods from the North and West out of the South and this section will be saved many hundreds of thousands of dollars every year. The great trouble with the South to-day is that so much money is sent out of it for articles that could be easily produced at home. This constant draining of money from the South steadily impoverishes it.

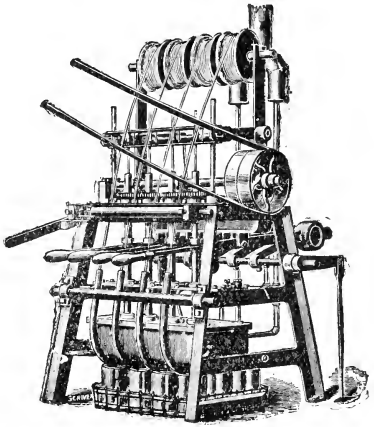
Endeavor then to market your output in the South. Supply the town in or near which your factory is situated. Then visit the nearby towns and introduce your goods there. If they are of good quality there should not be great trouble experienced in inducing merchants to handle them. One South Carolina company of young men adopted a method which, while it is not commended, was effective in bringing store keepers to see that a home industry should be supported. They had put up an excellent quality of several vegetables but found the retail grocers unwilling to handle them. Undaunted, they started on a personal canvass of the town and offered their goods to the consumers at a slight advance over the regular wholesalers' prices at which they had offered to sell to the retailers. They were not long in securing a large list of orders for goods to be delivered at stated periods during the year. The merchants, finding that if they were not inclined to support an industry that was doing its share to build up the town the people were, soon came to terms, and there was subsequently no reason to complain of a lack of a local market for at least a portion of the output.

Such a course is not to be commended except under unusual circumstances. As a rule the merchant will be found willing enough to assist in making a success of an industry whose tendency is to increase the prosperity of his community. It is not the province of canners to retail goods. Their business should be, whenever possible, with the wholesaler or the broker. If there are no wholesalers in their vicinity, and their pack is so small that the retailers of a few small towns may be able to handle it all, then they are justified in dealing directly with them. Jobbers are very properly jealous of infringements on their territory. They are not apt to regard with favor sales direct to retailers on the part of the canners; and if the latter desire to do business with the jobbers and sell their pack off in large lots, they had better confine their transactions to them and the brokers. Especially is this course advisable if the factory is situated near

DANIEL G. TRENCH & CO.,

CHICAGO,

Canning Factory Outfitters.



THE CANADIAN CAPPING MACHINE.

CAPACITY 15,000 CANS PER DAY.

THE CHEAPEST AND BEST POWER CAPPER FOR ITS CAPACITY ON THE MARKET.

SIMPLE, DURABLE, and needs no experienced machinist to take care of it.

Send for detailed description and testimonials.

a large distributing point. There may be canneries located so far from jobbing centers that the freight rates effectually preclude them from shipping to wholesale houses there. Under such circumstances there is no recourse but to vigorously drum up trade in the territory about the factory.

Every year the South is becoming a heavier consumer of canned goods. This is not so much due to the increase of population as to the more general introduction of this class of food. Not only in the cities, towns and villages, but on the farms consumers are found. Canners, whose self-interest has taught them to study the sources of demand, report that the farming classes are consuming a vastly greater proportion of canned goods than a few years ago, and that with a return of prosperity to the agriculturists of the South, the consumption among that class will be rapidly increased. The Southern people in towns are heavy buyers of canned goods. Practically all of this demand should be supplied by Southern canners. At present it is not. In almost any store the greater number of cans will be found bearing labels of Northern and Western packers; to some extent this has been due to a distrust of Southern canned goods—a natural fear of a new industry. This feeling has been largely driven out. It still exists but every year approaches nearer to annihilation. Southern canners have proved that they can pack goods equal in quality to those from other sections. Once the public learns that the victory is won, and the era of the Northern and Western canned goods in the South is at an end. This is one reason why such emphasis has been laid on the injunction to Southern canners to subordinate quantity to quality.

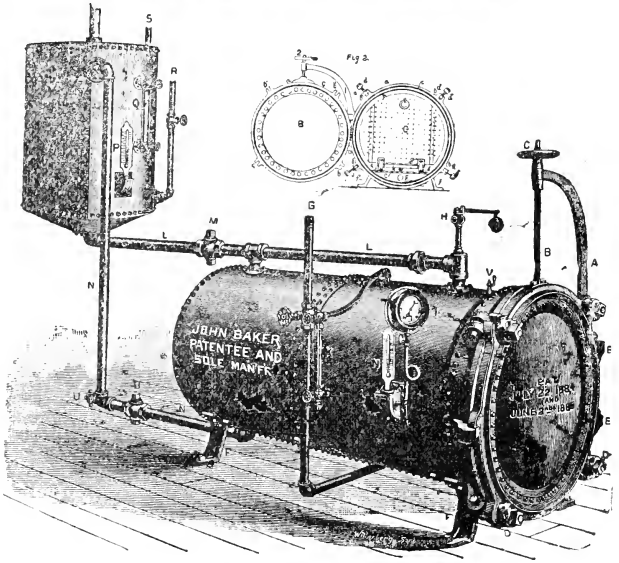
In the larger markets of the South merchandise brokers are to be found who will sell canned goods on samples for a small commission. Jobbers also buy direct on samples. Southern canners must expect to meet the prices of Northern and Western canners. Business men cannot be governed largely by sentiment. It is too frequently a question of close profits with them. Be fair in all dealings with the jobbers; have your goods just what you represent them to be, and once a foothold is obtained, it need never be lost.

Southern canners of oysters, terrapin, etc., have shipped extensively to Western and Northern markets and found a ready sale. Canners of pineapples will soon do likewise. Large canners of vegetables and fruits have also successfully invaded the markets of those sections. But the small canner cannot expect to do this; to him the South is the natural market. Here he should seek to sell his output, and here, if it is of a quality that justifies Southern people in buying, he will dispose of it at a good

DANIEL G. TRENCH & CO.,

CHICAGO,

Canning Factory Outfitters.



BAKER'S HORIZONTAL KETTLE

(Fitted for Water and Steam).

We can also furnish this Kettle for dry steam only.

The Horizontal Kettle has many points of advantage over the Upright Kettle.

Full particulars, prices and testimonials on application.

(See Battery of Kettles on another page of this book).

profit. As his output increases he can, if he desires, seek markets elsewhere in the United States and outside of this country. A few Southern canners are now shipping to Central America. The trade there is not large but it is hoped that the coming years will find a heavy demand for the products of Southern canneries there, in Mexico, and in the countries of South America.

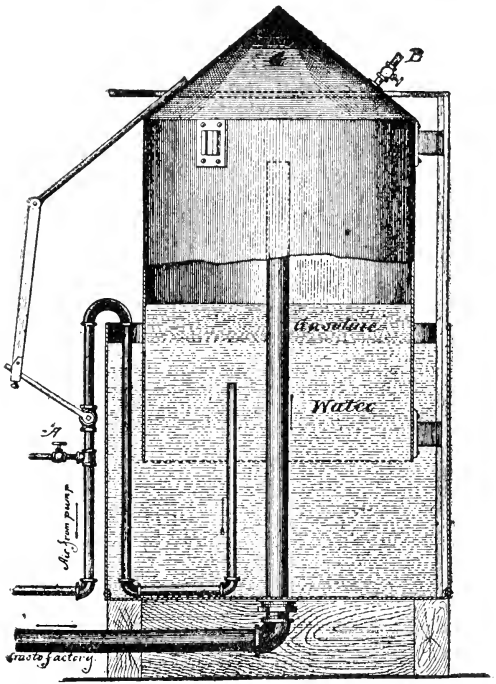
Labels: In addition to putting up a fine article Southern canners must present their goods in an attractive shape. The eye must be appealed to. A slovenly looking article is not likely to quickly find its way into public favor. In their first purchases, at least, customers are likely to some extent to be led by sight. Hence the importance of artistic labels carefully and cleanly put on.

Southern canners must also learn the value of brands, or trade marks, for their goods. Some have already done so, but the majority pay no attention to the establishment of a brand in public favor through its excellence. Those who put up a really superior article will appreciate the value at once of having it so designated that it will not be confused with others. Knowing that their output is fine in quality they should not fail to secure the advantages that are the result of the public's appreciation of a good article of food. To do this there must be some individuality about their canned goods, some characteristic that will cling to the memory of purchasers and render it an easy matter for them to call for the same goods in making subsequent purchases. Nothing will do this better than an attractive name, backed up by an attractive picture. It may cost a little more in the beginning to have an especial label lithographed, but it will be found profitable in the long run to do so, especially with the larger factories, whose output will be scattered over a wide area. Smaller factories, whose output will be marketed near home, can order stock labels merely having the name of the factory printed on them in bold type. There are several large concerns that are devoted especially to labels and from any of them satisfactory work can be obtained. Frequently a wholesale house will contract for a large number of cases (2 dozen to case), having labels bearing its name placed on the cans instead of the regular canner's labels.

DANIEL G. TRENCH & CO.,

CHICAGO,

Canning Factory Outfitters.



THE

RANNEY

GAS

MACHINE.

This machine furnishes Gas for illuminating and for use in fire pots from the same pipe, and is a safer, more economical and better system for use in Canning Factories or Can Shops than Kerosene or Gasoline.

Send for detailed information and testimonials.

CHAPTER XV.

Drawbacks to Canning in the South.

Among the letters that have been received and made use of in the preparation of this compendium, many from the oldest canners in the South, the pioneers of the industry in this section, not one has been marked by other than a most hopeful feeling as to the future. All seem to believe that the difficulties hereafter will be less in number and easier to overcome than those that had to be met and struggled against in the past. In answering the request for a statement as to what they considered the chief obstacles to the expansion of the industry in the South at present, almost every one has added a few lines to the effect that in his opinion the South is bound to become the great canning section of the world and that the obstacles at present existing can be overcome by the adoption of proper methods and the organization of Southern canners into a strong, compact body working for the common interest.

The same replies came from all directions. But three obstacles were pointed out. They were—

Inadequate capital.

Inability to obtain sufficient supplies.

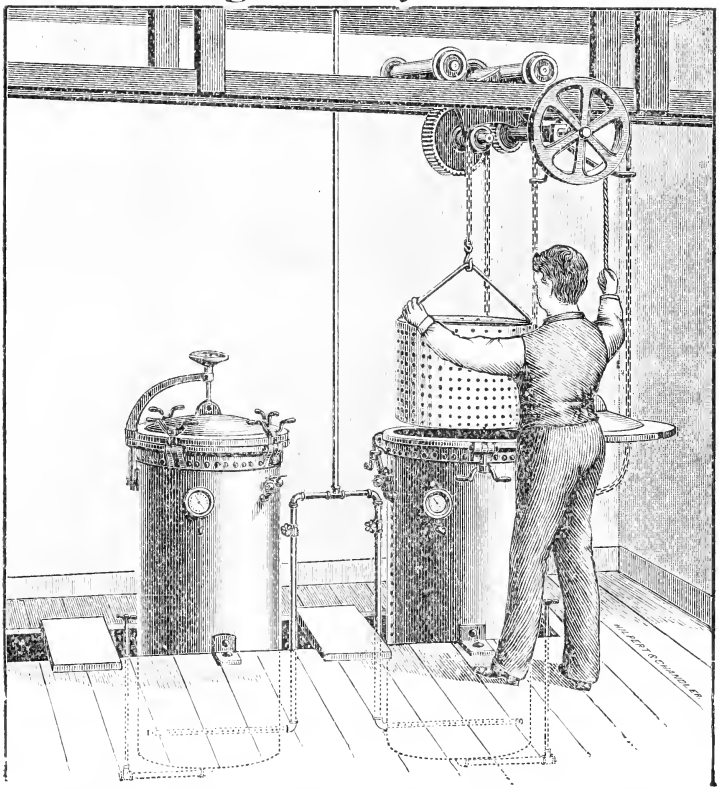
Excessive freight rates both ways—on the empty cans coming to the factories, on the filled ones going out from them.

The first of these has already been referred to. The fact that a canning factory cannot be started and operated on hardly sufficient money to put in the smallest plant is now better realized than it was a few years ago. More canning companies are being organized and fewer individuals are attempting to establish factories of their own, as a result. The companies, too, are providing more capital than heretofore, amounts from $2,500 up to $10,000 or more. Canneries started in the past year have been, as a rule, on a larger scale. The future will see new concerns providing plants with much greater capacities than are now the rule in the South. The obstacle of inadequate capital will work its own cure. As the factories now in the South with sufficient capital to give them an opportunity to operate properly prove good paying investments, an inclination on the part of the public to invest more freely in these enterprises will become apparent. The manner in which cotton mills, with capital invested ranging from $25,000 up to $500,000, have gone up all over the South shows that there is adequate capital in this section for any industry that demonstrates its ability to give a good return to those placing their money in it. While there will be numerous small canneries

DANIEL G. TRENCH & CO.,

CHICAGO,

Canning Factory Outfitters.



BAKER'S UPRIGHT KETTLES AND TRAVELLING HOIST.

We furnish Kettles of all kinds—Horizontal and Upright. OPEN VATS, &c.

☞COMPLETE CATALOGUE ON APPLICATION.☜

scattered through the South, the tendency now seems to be, whenever it is possible to place sufficient stock, to build and equip factories of more pretentious proportions. These large concerns will be of great assistance to the smaller factories, as the presence of a number of them will eventually induce the manufacture of cans at several points in the South, lead to the forcing down of freight rates, and to the more general introduction of canned goods in Mexico, the Central American States and the countries of South America, with which the South should, and will, have more extensive trade relations year after year.

As to the inability to obtain supplies, that has been overcome without great difficulty when canners have shown farmers that they really mean business, that they have the money to pay for supplies, and that any contracts they may make will be fully carried out. Unless the farmer knows that he is to have a sure market for his products he cannot be blamed if he does not turn his attention to vegetables and fruits. As has been pointed out, contracts should be made with reliable farmers as soon as it is definitely decided that a canning factory is assured. Pay promptly for supplies the first season and there is not apt to be much trouble experienced in after seasons. Or, if the opportunity is open, do as some Southern canners are now doing: Buy or rent forty or fifty acres, or whatever land will be needed, and raise supplies directly and save the profits that would otherwise go to the farmers. Every successful cannery, by wiping out any prejudice that may exist among farmers of its vicinity against changing their crops in part, renders it easier for new ones to provide for the necessary supplies.

High freight rates are the most serious obstacle of all encountered. It is the one that will continue the longest, but even it is not sufficient to offset the many advantages the South offers for the industry. Freight on the cans from Baltimore, Chicago or other manufacturing points, is a serious matter, and especially to interior factories debarred from the water routes. It is but a matter of a short time, it is believed, when this will be partly overcome by the establishment of centrally located can making plants. At present the freights have to be paid, though, no matter how high they may be. In the event of the canner seeking distant markets this obstacle likewise tends to somewhat further reduce his profits. In other lines of business by effective organization and continued opposition before railroad commissions freights are kept down. Southern canners must do the same as Southern lumbermen, naval stores operators, etc. They must unite and fight this and other battles as one man. The obstacle can be wiped out in this way. The nucleus of such an organiza-

DANIEL G. TRENCH & CO.,

CHICAGO.

Canning Factory Outfitters.

Battery of Five Horizontal Kettles,

Showing arrangement of our Kettles fitted for Water and Steam, in Batteries of two or more.

tion is at hand in the Southern Canners' Association. Self-interest must soon force all Southern canners into it and in the combination will be found power sufficient to reduce the evil of excessive freight rates, of which so many complain, to a minimum.

There is, it will be seen, no obstacle that can greatly hinder the development of the canning industry to enormous proportions in the South.

CHAPTER XVI.

Can-Making in the South.

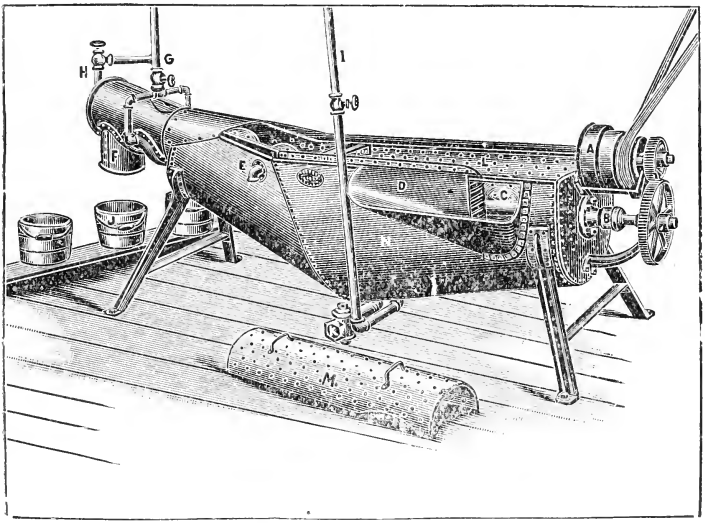
At the present stage of the canning industry in the South there are but few factories using a sufficient number of cans in a season to justify them in putting in special plants and manufacturing them. No factory, in fact, will find it profitable to do this if the necessary supplies are not nearly up to the 1,000,000 mark. Canning but 300,000 to 500,000 cans in an entire season, large as these figures may appear to canners just starting in the business, the wisdom of putting in can-making machinery is doubtful.

There is a way, however, in which the manufacture of cans may be introduced in the South with exceedingly bright prospects of its proving a profitable industry. The establishment of well-located factories for this purpose is referred to. A factory established in or near Savannah, for instance, would be within easy reach of South Carolina and Georgia canneries that will require in the next season in the neighborhood of 3,000,000 cans, and the demand from which will increase and a further demand be created by the establishment of other canning factories. A can-making factory so situated would have the advantage of water freights on the tin plates from Baltimore, New York or other Northern ports, and would be enabled to furnish cans at least at as low prices as the houses North. The great advantage to the Southern canner would lie in the reduced freight charges on empties. Or, if thought better, a more central point for a larger number of canneries could be selected for the can-making factory, the tin plates brought by water to Savannah or any other near Southern port, and thence by rail to the factory. It is hardly necessary to point out the fact that the difference in freight room between the tin plate and the number of cans that could be made from it is tremendous.

DANIEL G. TRENCH & CO.,

CHICAGO,

Canning Factory Outfitters.



Baker's Power Tomato Scalder and Washer.

Capacity 80 to 225 Bushels Per Hour, as Required.

The only invention on the market that will thoroughly wash tomatoes before scalding or during the scalding process, submerged not less than three inches. By so doing, the heavy mud will fall to the bottom of the tank, and light, muddy scum will float on top of the water and not come in contact with tomatoes again, as is generally done with all other devices on the market for scalding purposes.

With one factory to supply Southeast Georgia and the Southern and Southeastern parts of South Carolina, another could be established in the more northern part of Georgia to supply the canneries of that section, of Tennessee and Alabama. A factory could also be established in North Carolina to meet the demand in that State and parts of South Carolina and Virginia. Others will naturally suggest themselves. Interior canneries are the ones to whom the establishment of such factories appeal the most, those on the coast being in a position to bring their cans down at less expense by steamers or schooners. The starting of several of these can factories is inevitable. Many Southern canners have discussed it, and in a season or two more, finding the number of canneries greatly increased in this section and the demand for cans at a point where large can-making plants in several places will be in a position to secure enough orders to run them profitably, canners will see this new industry added to the South's long list, and the most important adjunct to canning permanently established here. The great saving that will be effected for Southern canners will aid in offsetting the disadvantage of high freight rates they will probably labor under for a few years longer in shipping their goods to markets at any distance.

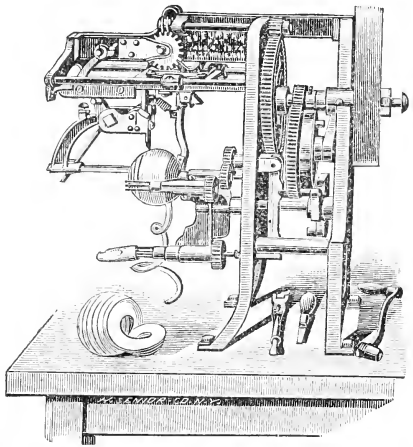
When can-making is introduced in the South care should be taken to secure the best machinery and skilled labor and to turn out cans equal to the best that the progressive and well-equipped establishments of the North and West place on the market. Southern canners must have well and properly made cans and while they will be eager to aid a home industry of this character they must in protection to themselve insist that its output is of good quality. Every year the cost of making cans is being reduced by the improvement of old machines and the invention of new ones. It is not the intention to enter into any discussion of the relative merits of the plants for this purpose now on the market. Any Southern canner or combination of canners, or any outside parties, who contemplate entering upon the manufacture of cans, can secure all necessary information by corresponding with the firms manufacturing machinery of this character. Investigate well before investing.

It may be that some Southern canners are so situated that they will, after a thorough consideration of all circumstances, conclude that it is advisable for them to manufacture their own cans. For their convenience the following statement, found in the catalogues of supply houses, is given. They will provide information to purchasers as to the method of manufacture. The standard sizes of cans, etc., will be found under chapter XIX.

DANIEL G. TRENCH & CO.,

CHICAGO,

Canning Factory Outfitters.



THE "EUREKA" APPLE PARER.

APPLE PARERS

—AND—

APPLE WORKING MACHINERY

—OF ALL KINDS.—

Send for Catalogues, &c.

COST OF MACHINERY NECESSARY TO MAKE 3,000 CANS PER DAY.

FOR MAKING CANS ONLY.

1 No. 1 Body Former	$ 9 00
1 pair No. 8 Snips	2 00
1 22-inch square Shear	40 00
1 No. 4 Press Tops and Bottoms	65 00
1 No. 3 Press Caps	50 00
1 Gallon Combination Die, Tops and Bottoms.	38 00
1 2-lb. Combination " " "	35 00
1 3-lb. " " " "	39 00
1 Gallon Cap Die	13 00
1 3-lb. "	13 00
1 2-lb. "	11 00
5 Floating Plates	5 00
15 Assorted size Seam blocks, $1.00 each	15 00
5 Seaming Machines	12 50
1 Hand Solder Cutter	15 00
1 Rosin Grinder	20 00
6 pair Hatchet Irons	6 00
6 pair Floating Irons	8 00
Files, Handles and small Tools	10 00
	$406 50

This can be increased to 6,000 per day by adding Seaming Machines and Irons, or any articles not needed can be omitted. There is doubtless a good discount for cash.

CHAPER XVII.

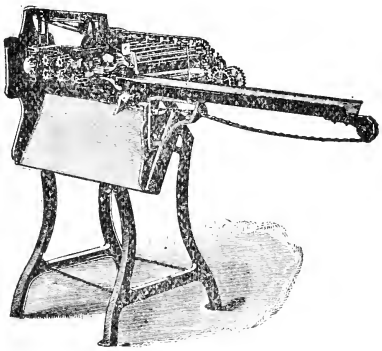
The Making of Contracts.

The making of contracts for canning supplies is not a difficult matter. State exactly what you contract to purchase, the quality, the amount, the price, how the goods are to be delivered and how they are to be paid for. Use as simple language as possible. Read it over carefully, see that every point is covered and understood by both parties to the agreement, make two copies, have each party sign both of them and each party keep one copy for refer-

DANIEL G. TRENCH & CO.,

CHICAGO,

Canning Factory Outfitters.



THE SPRAGUE CORN CUTTER.

The only machine for cutting corn off the cob which does its work perfectly.

Capacity, 20,000 to 30,000 cans per day.

We furnish all Machinery necessary for Corn-Canning Plants,

COOKERS, SILKERS, KETTLES, &c.

☞Send for Catalogues.

ence. Stand by the terms of the contract and there will be no trouble.

In making contracts for supplies have them of a definite character. Do not agree to buy the product of a certain number of acres or, as one unfortuate South Carolina canner did, to buy all that the farmer delivers at the factory. Okra was the article specified in this unique contract, and the factory ran but one season under this management.

Here is a form of contract that will give an idea as to what should be brought out. Legal verbiage is not necessary. There need be no tiresome reiteration. Make the sentences to the point and their interpretation unclouded:

MAYSVILLE, N. C., June 1, 1893.

The Phœnix Canning Company, of Maysville, hereby agrees to purchase from John Smith the following produce at the stipulated prices. This produce is to be delivered at the factory of this company in Maysville in quantities not to exceed 75 bushels a day. All produce so delivered is to be paid for in cash at the end of each week, on surrender of receipts given for each load delivered. It is expressly agreed that no produce shall be accepted by this company except that which is ripe, firm and otherwise in first-class condition. For any produce not of this standard special arrangements may be made:

ARTICLE.	QUANTITY IN BUSHELS.	PRICE PER BUSHEL.
Tomatoes.....	1,000	$ .20
Peas.....	500	.30
Beans.....	500	.20
Peaches	1,000	.65
etc., etc.		

[Signed] PHŒNIX CANNING CO.,
Per W. JONES, Pres't.

I hereby agree to furnish the produce specified above, at the stipulated prices and under the conditions set forth.

[Signed] JOHN SMITH.

This can readily be modified to suit the demands of any factory.

A form of contract for future deliveries in use by a number of Southern canners is given below:

No..... .....189...

.....buy and

NORTH GEORGIA CANNING CO., Dalton, Ga., sell the following Varieties of Canned Goods at the prices and on the terms and conditions named below:

Number of Cases.	Varieties.	Price per Dozen.
.....	3-lb Staud. Peaches.....	.....
.....	2-lb " Peaches.....	.....
.....	3-lb Second Peaches.....	.....
.....	2-lb " Peaches.....	.....
.....	3-lb Pie Peaches.....	.....
.....	2-lb Pie Peaches.....	.....
.....	6-lb Pie Peaches.....	.....
.....	1-gal Pie Peaches	.....
.....	2-lb Tomatoes.....	.....
.....	3-lb Tomatoes.....	.....
.....	6-lb Tomatoes.....	.....
.....	1-gal Tomatoes.....	.....
.....	Okra and Tomatoes.....	.....
.....	Succotash	.....
.....	Blackberries.....	.....
.....	3-lb Apples.....	.....
.....	2-lb Apples.....	.....
.....	1-gal Apples.....	.....

Terms.—Sixty days acceptance from date of shipment with Bill of Lading attached, buyer having privilege of discounting on presentation, within 10 days of shipment, less 1½ per cent., or at the rate of 9 per cent. per annum. Payment to made be in New York Exchange or the equivalent.

Conditions.—It is understood the above prices are for the goods f. o b. Dalton, Ga., or with shipping point common therewith. Seller not liable for non-delivery, if caused by destruction of cannery by fire or unavoidable casualties.

It is further agreed that all goods sold shall be shipped as soon as ready, but not later than thirty days after the packing of the latest variety mentioned in the assortment, and if for any cause whatsoever there should be goods unshipped by December 1st of the year contract is made, they shall be then billed and paid for.

In case of damage to crop, by which the seller is unable to make a full pack of any of the varieties named, he shall be liable for the delivery of fully 75 per cent. of such varieties upon which a short pack is made.

All claims for swelled tins must be made and bill rendered for the same prior to July 1st following the date of sale, and goods held subject to order of seller.

All claims other than for swelled tins must be presented within ten days from date of the receipt of goods.

REMARKS.....

.....

.....

..... Buyer.

NORTH GEORGIA CANNING CO., Sellers.

Per.....

Signed in Triplicate.

Do not enter into verbal contracts. They allow too much room for dispute, and are too frequently productive of misunderstanding and costly litigation.

CHAPTER XVIII.

Allied Industries.

There are several industries that naturally suggest themselves as being well suited to be carried on in conjunction with the canning business. It is not the intention here to more than refer to them, leaving it to the intelligent canner to adopt the one or more which he may find himself in an advantageous position to add to his canning business.

The making of tomato ketchup is the one that will first occur to him if he is packing that vegetable to any extent. The skins of the tomatoes, valueless in canning, are boiled down in ketchup making and the necessary condiments added. In large canning factories North after the skins have been boiled into a liquid it is run off into barrels and disposed of to the ketchup manufacturers. Southern canners having no such market may find it profitable to make the ketchup themseves.

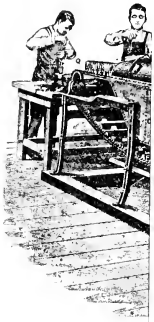
The making of butters from the skins of peaches, apples, pears, etc., is another way of turning to a good use what would otherwise be an absolute waste. If properly made a ready market should be found for these products.

Making jellies, jams, etc., from fruits and berries opens up another way in which the canning factory may be made to pay better. A special department for the making of ketchups, butters, jellies, jams, etc., would be a valuable addition to most canneries in the South.

The manufacture of fruit extracts, and of ciders, and vinegar, and the putting up of pickles, are industries that may be introduced on a small scale with excellent prospects of deriving reasonable profits from them. The outlay for the necessary apparatus for any of this work will not be heavy.

THE L

F
T



D

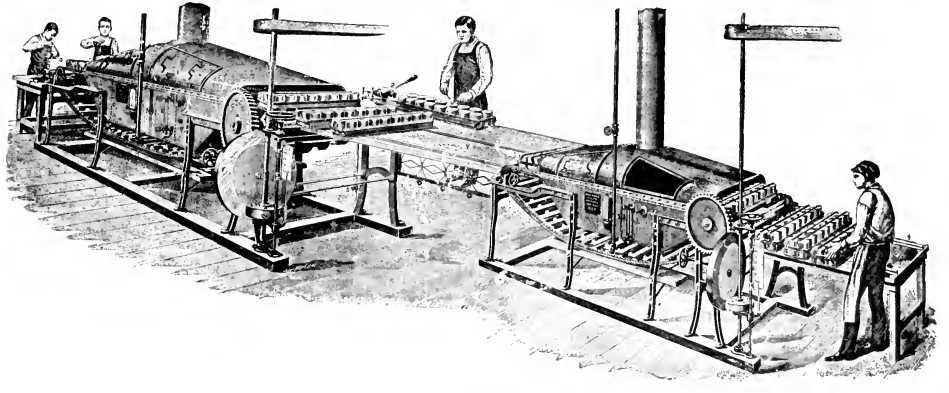
GENERAL A(

SPECIAL

THE BAKER CONTINUOUS PROCESS MACHINE,

FOR PROCESSING TOMATOES and FRUIT.

The manufacturers guarantee a saving of six cents per dozen on cost of processing with this machine as compared with the old method.



SEND FOR DETAILED DESCRIPTION AND TESTIMONIALS.

DANIEL G. TRENCH & CO.

CHICAGO, ILL.

GENERAL AGENTS FOR THE BAKER MAN'F'G CO.'S **Improved Canning Machinery.**

(FACTORY, MUSCATINE, IOWA.)

SPECIAL ATTENTION GIVEN TO EQUIPPING CANNING PLANTS COMPLETE.

CHAPTER XIX.

General Information of Value.

STANDARD SIZES FOR CANS.

	Diameter.	Height.
No. 1 Cans	$2\frac{3}{4}$ in.	4 in.
No. 2 Cans	3 7-16 in.	4 9-16 in.
No. 3 Cans	4 3-16 in.	$4\frac{7}{8}$ in.
No. 6 Cans, twice the quantity of No. 3		
No. 10 Cans	$6\frac{1}{4}$ in.	7 in.

STANDARD SIZES OF BOXES.

Sizes of Boxes for Canned Goods—inside measurement.

2 dozen	Cans,	size	1	$11\frac{1}{2}$ x $8\frac{1}{2}$ x $8\frac{1}{4}$ inches
2	"	"	2	$14\frac{1}{4}$ x $10\frac{1}{2}$ x $9\frac{1}{2}$ "
2	"	"	3	$17\frac{1}{4}$ x 13 x $10\frac{1}{4}$ "
4	"	"	1	$16\frac{1}{2}$ x $11\frac{1}{4}$ x $8\frac{1}{4}$ "
1	"	"	1, flat	$11\frac{1}{2}$ x $8\frac{1}{2}$ x $4\frac{1}{4}$ "
1	"	"	2, flat	$14\frac{1}{4}$ x $10\frac{1}{2}$ x $4\frac{3}{4}$ "
$\frac{1}{2}$	"	Gallon	Cans	19 x $12\frac{3}{8}$ x $7\frac{1}{4}$ "
1	"	"	high boxes	19 x $12\frac{3}{4}$ x 14 "
1	"	"	flat boxes	$25\frac{1}{4}$ x 19 x 7 "
1	"	No. 6	Cans	$20\frac{3}{8}$ x $15\frac{3}{8}$ x $6\frac{7}{8}$ "

SIZES OF TIN PLATE USED IN CAN MAKING.

I. C. 14x20, Coke ..... B. V. Grade.
I. C. 12x12, Coke ..... B. V. Grade.
I. C. 13x26, Coke ..... B. V. Grade.
I. C. 14x20 ..... I. B. Grade.
I. C. 14x20 ..... Charcoal.

SHIPPING WEIGHTS FOR CANNED GOODS.

No. 1 Boxes ..... 26 pounds.
No. 2 Boxes ..... 46 pounds.
No. 3 Boxes ..... 70 pounds.

VARIETIES GENERALLY USED FOR CANNING.

APPLES	Baldwin, Golden Pippin, Greening.
APRICOTS	Moorpark, Large Early, Royal.
BLACKBERRIES	Lawton, Prolific, Common.
CHERRIES	Morello, Late Duke, May Duke.
GOOSEBERRIES	Seedlings, Downings, Smith's Improved.
PEACHES	Hale's Early, Crawford's Early, Old Mixon, Lemon Cling, Smock's, Heath.
PEARS	Bartlett, LeConte, Lawrence.
PLUMS	Green Gage, Gellemberg, Orleans.
QUINCES	Augers, Champion, Seedling.
RASPBERRIES	Antwerp, Black Cap, Brandywine.
STRAWBERRIES	Wilson's, Hoffman, Duchess.
WHORTLEBERRIES AND BLUEBERRIES, wild (not cultivated).	
ASPARAGUS	Oyster Bay.
STRING BEANS	EarlyValentine, Early Mohawk, Black Wax.
LIMA BEANS	White Lima, Seta.
CORN	Egyptian, Stowell's Evergreen.
OKRA	Dwarf, Prolific.
PEAS	Extra Early, Champion, Marrowfat.
PUMPKIN	No special variety.
SQUASH	Boston Marrow, Hubbard.
TOMATOES	Perfection, Acme, New Queen.

CANNED GOODS LAW OF MARYLAND.

[Laws similar to this have been adopted by a number of States and it is to be presumed that as canning becomes of greater importance as an industry in the South that the legislatures of this section will enact laws of a like nature.]

SECTION 1. *Be it enacted by the General Assembly of Maryland*, That it shall be unlawful in this State for any packer of or dealer in hermetically canned or preserved fruits, vegetables or articles of food (excepting oysters), to sell such canned or preserved fruits, vegetables or other articles of food aforesaid, unless the cans, jars or vessels which contain the same shall bear the name and address of the person, firm or corporation that canned or packed the article, or the name of the dealer who purchases the same from the packer or his agent; such name and address shall be plainly printed on the label in letters not less than three-sixteenths of an inch in height and one-eighth of an inch in breadth, together with a brand-mark or term indicating clearly the grade or quality of the article contained therein.

SEC. 2. *And be it enacted*, That all packers and dealers in "Soaked Goods," put up from products dried or cured before canning or sealing, shall in addition to complying with the provisions of section one of this Act, cause to be printed plainly diagonally across the face of the label in good legible type, one-half of an inch in height and three-eighths of an inch in width, the words "Soaked Goods."

SEC. 3. *And be it enacted*, Any person, firm or corporation violating any of the provisions of this Act shall be deemed guilty of a misdemeanor and fined not less than fifty dollars nor more than one thousand dollars, to be recovered by indictment in any court in this State having criminal jurisdiction, one-half of said fine to be paid to the informer and the other half to the State Treasury, as other fines are paid.

SEC. 4. This Act shall take effect from November 1, 1886.

RULES FOR CALCULATING THE SPEED OF PULLEYS AND GEARS.

In calculating for gears, multiply or divide by the number of teeth as may be required. In calculating for pulleys, multiply or divide by their diameter in inches.

The driving wheel is called the *Driver*, and the driven wheel the *Driven*.

TO FIND THE DIAMETER OF THE DRIVING PULLEY.

Multiply the diameter of the driven pulley, in inches, by its required number of revolutions, and divide this product by the number of revolutions of the driver. The quotient will be the diameter of the driving pulley in inches.

TO FIND THE DIAMETER OF THE DRIVEN PULLEY.

Reverse the above operation, multiply together diameter of driving pulley and its number of revolutions, and dividing product by required number of revolutions of driven. The quotient will be the diameter of the driven pulley.

TO FIND THE NUMBER OF REVOLUTIONS OF THE DRIVEN PULLEY.

Multiply the diameter of the driver by its number of revolutions, and divide the product by the diameter of the driven pulley. The quotient will be the number of revolutions of the driven pulley.

LIBRARY OF CONGRESS

0 014 420 932 1

$1.00 FOR ONE YEAR.

THE BEST INVESTMENT

MADE BY

A Southern Canner

Is a Year's Subscription to

THE MIRROR OF COMMERCE

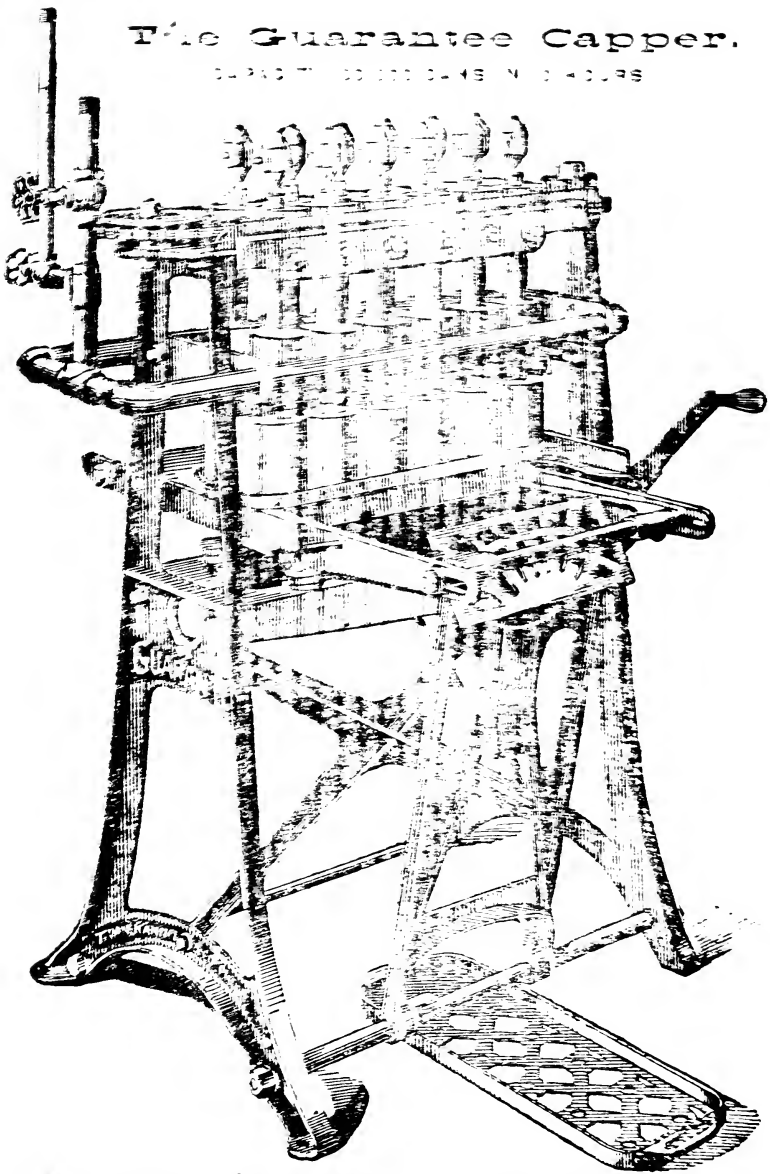
AND

Southern Canners' Journal.

ADDRESS THOMAS GAMBLE, MANAGER,

SAVANNAH, GA.

The Guarantee Capper.



MANUFACTURED BY SINCLAIR-SCOTT MFG. CO., BALTIMORE, MD